

DOGGER BANK D WIND FARM

Preliminary Environmental Information Report

Volume 2

Appendix 12.1 Consultation Responses for Marine
Mammals

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Table of Contents

12.1 Consultation Responses for Marine Mammals	5
References	37
Acronyms	39

Glossary

Term	Definition
Design	All of the decisions that shape a development throughout its design and pre-construction, construction / commissioning, operation and, where relevant, decommissioning phases.
Development Consent Order (DCO)	A consent required under Section 37 of the Planning Act 2008 to authorise the development of a Nationally Significant Infrastructure Project, which is granted by the relevant Secretary of State following an application to the Planning Inspectorate.
Effect	An effect is the consequence of an impact when considered in combination with the receptor's sensitivity / value / importance, defined in terms of significance.
Environmental Impact Assessment (EIA)	A process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information and includes the publication of an Environmental Statement.
Environmental Statement (ES)	A document reporting the findings of the EIA which describes the measures proposed to mitigate any likely significant effects.
Evidence Plan Process (EPP)	A voluntary consultation process with technical stakeholders which includes a Steering Group and Expert Topic Group (ETG) meetings to encourage upfront agreement on the nature, volume and range of supporting evidence required to inform the EIA and HRA process.
Expert Topic Group (ETG)	A forum for targeted technical engagement with relevant stakeholders through the EPP.
Impact	A change resulting from an activity associated with the Project, defined in terms of magnitude.
Mitigation	Any action or process designed to avoid, prevent, reduce or, if possible, offset potentially significant adverse effects of a development. All mitigation measures adopted by the Project are provided in the Commitments Register.
Project Design Envelope	A range of design parameters defined where appropriate to enable the identification and assessment of likely significant effects arising from a project's worst-case scenario. The Project Design Envelope incorporates flexibility and addresses uncertainty in the DCO application and will be further refined during the EIA process.
Scoping Opinion	A written opinion issued by the Planning Inspectorate on behalf of the Secretary of State regarding the scope and level of detail of the information to be provided in the Applicant's Environmental Statement.

Term	Definition
	The Scoping Opinion for the Project was adopted by the Secretary of State on 02 August 2024.
Scoping Report	<p>A request by the Applicant made to the Planning Inspectorate for a Scoping Opinion on behalf of the Secretary of State.</p> <p>The Scoping Report for the Project was submitted to the Secretary of State on 24 June 2024.</p>
Study Areas	A geographical area and / or temporal limit defined for each EIA topic to identify sensitive receptors and assess the relevant likely significant effects.
The Applicant	SSE Renewables and Equinor acting through 'Doggerbank Offshore Wind Farm Project 4 Projco Limited'.
The Project	Dogger Bank D Offshore Wind Farm Project, also referred to as DBD in this PEIR.

12.1 Consultation Responses for Marine Mammals

1. **Volume 1, Chapter 12 Marine Mammals** for the Dogger Bank D Offshore Wind Farm (herein referred to as ‘the Project’ or ‘DBD’) has been informed by consultation with the Planning Inspectorate and stakeholders following the publication of the Scoping Report (Royal HaskoningDHV, 2024) and the comments contained within the Scoping Opinion (Planning Inspectorate, 2024). This appendix contains details of the relevant comments for **Volume 1, Chapter 12 Marine Mammals** and the Applicant’s responses in **Table 12.1-1**.
2. The Applicant previously submitted a Scoping Report in 2023 based on project parameters at that time. The 2024 Scoping Report (Royal HaskoningDHV, 2024) and adopted Scoping Opinion (Planning Inspectorate, 2024) have superseded the 2023 Scoping Report and as such consultation responses on the 2023 Scoping Report are not considered further in this document except where they are included in the 2024 consultee responses and remain relevant to the Project.

Table 12.1-1 Consultation Responses on Marine Mammals

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from Dogger Bank D (DBD) ETG3 meeting 1 and Method Statement (05/12/23)	Section 2.3.1 (paragraphs 12 and 13) of the method statement describes that megafauna surveys involved gathering aerial digital imagery over the Dogger Bank C (DBC) array area and that the survey area and sightings will be clipped to the Dogger Bank D (DBD) array area (plus a buffer of 4km). It also describes that the methodology ensured a minimum of 20% coverage of the sea surface being captured. Natural England is concerned that clipping the DBD area may lead to a bias in distribution of survey results. Clarity is needed on whether the 20% coverage is evenly spread across the clipped section of data for DBD (i.e. there is 20% coverage of survey transect lines within DBD).	Figure 12.2-3 within Appendix 12.2 Marine Mammal Technical Report shows the transects followed within the DBD array area. As shown by the Plate, there is even coverage across the DBD survey area.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 1 and Method Statement (05/12/23)	Section 2.3.1.1 (paragraph 23) of the method statement outlines that a review of available correction factors for density estimates for species other than harbour porpoise will be undertaken if required. Natural England is satisfied with this approach in principle, provided that clear justification is provided in the Preliminary Environmental Information Report (PEIR) (and / or Environmental Statement) for any correction factors used.	Acknowledged. All correction factors applied are described in Appendix 12.2 Marine Mammal Technical Report; Section 12.2.4.6 and Section 12.2.4.7.
Natural England	Feedback from DBD ETG3 meeting 1 and Method Statement (05/12/23)	It is proposed in slide 25 of the ETG slide pack and paragraph 74 of the method statement that only MU9 (Southeast England) will be used for the harbour seal study area based on tagging studies (Carter <i>et al.</i> , 2020) and Special Area of Conservation (SAC) density maps showing no connectivity between MUs 8 and 9; and based on the harbour seal foraging distance of up to 273km (Carter <i>et al.</i> , 2022). Natural England is of the view that the tagging data on which these conclusions are based is limited and therefore connectivity to the project site cannot be excluded. We therefore advise that Management Unit (MU) 8 (Northeast England) is also included in the assessment.	Noted, the Northeast England MU has been included with the Southeast England MU in the reference population used for the assessment for harbour seal, as described in Section 12.6.8 of Volume 1, Chapter 12 Marine Mammals.
Natural England	Feedback from DBD ETG3 meeting 1 and Method Statement (05/12/23)	As discussed during the ETG, Natural England requests clarification on what construction activities could fall within the Southern North Sea SAC. We would welcome this information being provided within the EPP, or in the PEIR if not available sooner. Additional information on the plans for a desalination plant would also be welcome.	Further information on proposed activities within the Southern North Sea SAC was provided to the ETG (17 th October 2024). In summary, the only infrastructure present within the Southern North Sea SAC is the export cable. In addition, the desalination plant has been removed from the Project's design envelope.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 1 and Method Statement (05/12/23)	Natural England largely agrees with the methodology of assessing disturbance to marine mammals set out in Section 4.1.1.1.3. Our recommendations for order of preference are: dose response curve assessments are used for harbour porpoise and seals; known and recorded disturbance ranges are used for harbour porpoise and seals. Other approaches used (for example National Oceanic and Atmospheric Administration (NOAA) disturbance threshold for baleen whales) would require full justification within the PEIR. For the approach of using Temporary Threshold Shift (TTS) as a proxy, we advise that this is only used in instances where no other method is available.	Noted, the assessment for disturbance using Effective Disturbance Ranges (EDRs) or documented disturbance ranges for all marine mammal species is presented in Section 12.7.1.2.2.1 . The dose-response curve was used for harbour porpoise, all dolphin species and grey and harbour seal as presented in Section 12.7.1.2.2.2 of Volume 1, Chapter 12 Marine Mammals .
Natural England	Feedback from DBD ETG3 meeting 1 and Method Statement (05/12/23)	We welcome the approaches outlined in Section 5 of the method statement. However, Natural England cannot scope out impacts based on embedded mitigation to be included in future plans, unless we have seen those plans to agree the mitigation is sufficient. We advise that relevant draft plans (for example Marine Mammals Mitigation Protocol (MMMP), Vessel Management Plans (VMP), PEMP are provided alongside the PEIR or at the point of application.	All relevant mitigation options are presented in the Draft Outline MMMP , including those for vessels.
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	The Marine Management Organisation (MMO) agree that it is appropriate that the potential impacts assessed during construction will be auditory injury and behavioural impacts resulting from (i) impact piling, and (ii) other construction activities such as dredging and rock placement and vessel noise.	<p>The assessment for auditory injury from piling is presented in Section 12.7.1.1.4.1 and Section 12.7.1.1.4.2 of Volume 1, Chapter 12 Marine Mammals.</p> <p>For other construction activities, auditory injury is assessed in Section 12.7.1.3.</p> <p>The assessment for behavioral disturbance for piling is presented in Section 12.7.1.2, and for other construction activities is provided in Section 12.7.1.4.</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	The MMO also agree that it is appropriate that the risk of auditory injury and behavioural impacts during the operational and maintenance phase will be considered (due to maintenance activities (such as dredging and rock placement) and vessel noise (including disturbance to foraging areas), and also from the noise associated with operational wind turbines.	<p>For other construction activities, auditory injury is assessed in Section 12.7.1.3, and behavioural effects are assessed in Section 12.7.1.4 of Volume 1, Chapter 12 Marine Mammals.</p> <p>For vessels, auditory injury is assessed in Section 12.7.1.3, and behavioural effects are assessed in Section 12.7.1.4.</p> <p>For operational wind turbines, auditory injury is assessed in Section 12.7.2.1, and behavioural effects are assessed in Section 12.7.2.2.</p>
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	The MMO agree that unexploded ordnance (UXO) identification and clearance will require a separate marine licence. Please note, the MMO advise that this applied for under two separate marine licence applications – one for investigation works and once for clearance.	<p>A separate marine licence application for UXO clearance would be submitted post-consent once detailed information on the locations and extent of UXO required to be cleared is known.</p> <p>A separate license will also be sought for any surveys, as required.</p>
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	<p>Regarding the proposed thresholds for auditory injury and disturbance for Underwater Noise Modelling, the MMO agree with the proposal to use noise exposure criteria from Southall <i>et al.</i> (2019) for marine mammals and Popper <i>et al.</i> (2014) for fish species. Currently, these are the most appropriate, peer-reviewed criteria.</p> <p>For assessing disturbance from piling operations, potential approaches will include dose response curves, disturbance thresholds, known and recorded disturbance ranges, and Temporary Threshold Shift (TTS) as a proxy.</p>	<p>The underwater noise modelling, as provided in Appendix 12.3 Underwater Noise Modelling Report, has been undertaken using the Southall <i>et al.</i> (2019) and Popper <i>et al.</i> (2014) thresholds and criteria.</p> <p>Wherever available, dose-response curves have been used to inform the assessments for disturbance from piling (see Section 12.7.1.2.2.2 of Volume 1, Chapter 12 Marine Mammals).</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
		<p>For quantifying the risk of disturbance, we recommend that assessments apply dose response curves for proximity to the sound source and received sound level (Dunlop <i>et al.</i>, 2017). Approaches based directly on the “distance of effect” reported for in situ behavioural studies (e.g. Merchant <i>et al.</i>, 2018) can also be used as an empirical estimate of the risk of behavioural responses (Gomez <i>et al.</i>, 2016), provided that the sound level of the noise source in the cited study is not substantially exceeded in the assessment scenario. Similarly, the Statutory Nature Conservation Body (SNCB) guidance (Joint Nature Conservation Committee (JNCC) 2020) lays out advice on the assessment of significant disturbance in UK Special Areas of Conservation (SACs) for harbour porpoise. The advice is to use fixed disturbance distances (in the form of Effective Deterrence Ranges) 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 (rather than using TTS thresholds as a proxy).</p>	<p>Following advice during the ETG, the 26km EDR for harbour porpoise (JNCC <i>et al.</i> 2020) has been used to assess for any potential disturbance to dolphin species during piling as there is no agreed disturbance threshold for dolphins. This is presented in Section 12.7.1.2.2.1.2.</p>
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	<p>The MMO have no major reservations with the use of the Lucke <i>et al.</i> (2009) disturbance threshold for harbour porpoise. The NOAA Level B harassment thresholds may be useful for minke whale although full justification should be provided in the assessment if this threshold is used.</p>	<p>Following further discussions through the ETG, neither the Lucke <i>et al.</i> (2009) or the NOAA Level B harassment thresholds have been used to inform the assessments for harbour porpoise and minke whale respectively. Instead, dose- response curves and EDR assessments have been undertaken, as noted in the above response.</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	In regard to the cumulative exposure modelling, the MMO recommend that modelling is undertaken for a stationary receptor for fish. The fleeing speeds presented for marine mammals are in keeping with previous developments and assessments.	Acknowledged.
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	<p>The MMO recommend that assessments apply dose-response curves (where possible) for proximity to the sound source and received sound level, in the first instance. Approaches based directly on the “distance of effect” reported for in situ behavioural studies can also be used as an empirical estimate of the risk of behavioural responses, provided that the sound level of the noise source in the cited study is not substantially exceeded in the assessment scenario. Fixed disturbance distances (i.e. EDRs) could also be used in the absence of more bespoke scientific evidence for the species and noise source concerned.</p> <p>The MMO agree with Natural England regarding the use of proxy Dose Response Curves. We advise that options are explored with full details and justification provided for the choices made. In some instances, the use of proxy dose response curves may be appropriate.</p>	Acknowledged. See above response.
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	The MMO agree with the use of known disturbance ranges such as Effective Deterrence Ranges (EDRs).	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	<p>As the Applicant is aware, the MMO do not support the use of TTS as a proxy for disturbance. TTS constitutes a temporary reduction in the sensitivity of the auditory system. The characteristics of TTS are distinct from behavioural disturbance, in which an animal changes its behaviour in response to a stimulus. There is no cognitive impairment implicit in behavioural responses.</p> <p>TTS typically occurs at much higher sound exposures than the onset of behavioural disturbance, and so if behavioural disturbance is assumed to occur only at sound exposures where TTS would occur, this is likely to significantly underestimate the risk of disturbance.</p> <p>To quantify the risk of behavioural responses where there are no better alternatives, the EDRs in place for noise management in harbour porpoise SACs could be used instead. 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).</p>	Acknowledged, following advice during the EPP process, the 26km EDR for harbour porpoise (JNCC <i>et al.</i> 2020) has been used to assess for any potential disturbance to dolphin species during piling, rather than using TTS as a proxy. This is presented in Section 12.7.1.2.2.1.2 in Volume 1, Chapter 12 Marine Mammals.
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	The MMO does not agree with the use of TTS as a proxy for disturbance.	Acknowledged. See above response.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	It is not possible to comment fully on the MMMP at this stage. However, in terms of the general approach, the MMO agree that “the pre-piling search area will be based on the instantaneous PTS ranges (and therefore may be larger than the standard 500 m as defined by JNCC)”. The extent of this search area / mitigation zone will need to be considered during the environmental impact assessment and agreed with the regulatory authority. As per the JNCC (2010) guidance, the radius of the mitigation zone should be no less than 500 metres, and this is measured from the pile location.	Draft mitigation options are presented in the Draft Outline MMMP . The mitigation zone is based on the worst-case instantaneous PTS ranges for both monopiles and pin-piles.
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	It has been stated that “the Acoustic Deterrent Device (ADD) activation times will be based on the cumulative PTS ranges for the installation of one pile”. The MMO recommend that this is based on the total number of piles installed in a 24-hour period, since this is the period over which PTS is accumulated within the NOAA guidance. These predicted ranges can then be used to determine appropriate ADD activation times.	Acknowledged. The ADD activation times are based on the worst-case maximum predicted PTS impact ranges for cumulative exposure (SEL _{cum}) during sequential installation of two monopiles or four pin piles, as presented in Section 12.7.1.2.2.3 of Volume 1, Chapter 12 Marine Mammals and the Draft Outline MMMP .
MMO	Feedback from DBD ETG3 meeting 1 and Method Statement (23/01/24)	It is difficult to comment further on the approach to any monitoring requirements at this stage. There is a requirement for developer to monitor the noise generated during construction.	Acknowledged. Monitoring underwater noise during the construction phase would be undertaken to validate any predictions from the underwater noise modelling presented in Appendix 12.3 Underwater Noise Modelling Report .
MMO	Scoping Opinion (02/08/24)	The MMO has provided comments on impacts on marine mammals from underwater noise. The MMO defers to Natural England as the SNCB in relation to all other potential impacts to marine mammals.	Acknowledged.
MMO	Scoping Opinion (02/08/24)	All relevant impacts in relation to marine mammals and underwater noise have been scoped in.	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
MMO	Scoping Opinion (02/08/24)	The MMO welcomes that site specific underwater noise modelling will be undertaken to inform the assessments for piling and will take into account soft-start and ramp-up procedures, as well as the number of piles to be installed each day, and the number that may be installed at the same time. It is expected that the underwater noise modelling will be undertaken using the Southall <i>et al.</i> (2019) thresholds as current best practice (para 547). The MMO requests the adoption of the Southall <i>et al.</i> (2019) thresholds for marine mammals and we would be happy to further advise on the noise modelling specifics as the EIA progresses.	Acknowledged. Methods and result of the underwater noise modelling is presented in Appendix 12.3 Underwater Noise Modelling Report . The underwater noise modelling has been undertaken using Southall <i>et al.</i> (2019) thresholds.
MMO	Scoping Opinion (02/08/24)	The MMO welcomes that the potential for Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS) due to other construction activities (such as dredging, cable laying, and rock placement), as well as construction vessels will be scoped into the EIA. Site-specific modelling will be undertaken. This may be later scoped out (following agreement through the ETG) should the underwater noise modelling show limited potential for any Permanent Threshold Shift (PTS) or TTS onset (paragraph 548). The MMO will continue to engage in these discussions.	Acknowledged.
MMO	Scoping Opinion (02/08/24)	The MMO agrees that behavioural / disturbance impacts resulting from piling, other construction activities and vessel noise should be scoped into the EIA (paragraph 549). The MMO welcomes that a dose response curve approach will be used wherever there is data available (paragraph 551). The best available dose response curves (at the time of writing) will be used to inform these assessments. This approach is recommended and is in keeping with assessments for other offshore wind farm developments.	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
MMO	Scoping Opinion (02/08/24)	It is also welcomed that for disturbance effects, where a dose response curve approach is not possible due to a lack of information (paragraph 552), the potential for disturbance will use reported and observed disturbance ranges wherever there is the information to do so (including the Effective Deterrence Ranges (EDR) for harbour porpoise and the disturbance range for seal species due to piling as reported by Russell <i>et al.</i> (2016)).	Acknowledged. To assess for any potential disturbance, EDRs and documented disturbance ranges have been used in Section 12.7.1.2.2.1 in Volume 1, Chapter 12 Marine Mammals along with dose-response curve for harbour porpoise, dolphins and seals in Section 12.7.1.2.2.2 . In addition, population modelling using the interim Population Consequences of Disturbance (iPCoD) has been carried out to assess for long-term disturbance to species where possible in Section 12.7.1.2.2.5 .
MMO	Scoping Opinion (02/08/24)	The MMO does not support the use of proxy for disturbance. TTS constitutes a temporary reduction in the sensitivity of the auditory system. The characteristics of TTS are distinct from behavioural disturbance, in which an animal changes its behaviour in response to a stimulus. There is no cognitive impairment implicit in behavioural responses. TTS typically occurs at much higher sound exposures than the onset of behavioural disturbance, and so if behavioural disturbance is assumed to occur only at sound exposures where TTS would occur, this is likely to significantly underestimate the risk of disturbance. To quantify the risk of behavioural responses where there are no better alternatives, the EDRs in place for noise management in harbour porpoise SACs (Special Area of Conservation), could be used instead. 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).	Acknowledged. TTS has not been used as a proxy to assess for disturbance from piling. Where EDRs or documented disturbance ranges and dose-response curves are not available for certain species, such as dolphins, the EDR and dose-response curve recommended for harbour porpoise has been applied (see Section 12.7.1.2.2.1.2 and Section 12.7.1.2.2.2 in Volume 1, Chapter 12 Marine Mammals).

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

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MMO	Scoping Opinion (02/08/24)	Site-specific underwater noise modelling will be undertaken for the Project for all relevant potential underwater noise sources. It is appropriate that the Popper <i>et al.</i> (2014) guidelines will be used to inform noise impact thresholds for mortality, recoverable injury, and TTS on fish, larvae, and eggs. Hawkins <i>et al.</i> (2014) will also be used as a basis for a conservative 135 decibels (dB) single-strike sound exposure level (SEL _{ss}) behavioural disturbance threshold in the case of spawning herring only. Whilst we acknowledge the limitations with the study, it is currently considered the best available evidence for predicting the range of behavioural effects in herring.	Acknowledged. Methods and results of the underwater noise modelling is presented in Appendix 12.3 Underwater Noise Modelling Report .
MMO	Scoping Opinion (02/08/24)	Due to a lack of empirical evidence on ‘fleeing’ speeds and directions in fish to underwater noise and vibration, we request that underwater noise modelling is based on a stationary receptor.	Acknowledged, methods and result of the underwater noise modelling is presented in Appendix 12.3 Underwater Noise Modelling Report .

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

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MMO	Scoping Opinion (02/08/24)	<p>Section 7.6.3.1 and paragraph 545, discuss Unexploded Ordnance (UXO) clearance, noting a detailed UXO survey will be completed prior to construction. The exact type, size and number of possible detonations and duration of UXO clearance operations is therefore not known at this stage. A separate Marine License application(s) will be made prior to construction for UXO investigation and clearance works, with an accompanying assessment of UXO clearance impacts on Marine Mammals (and will include site-specific underwater noise modelling). A European Protected Species (EPS) licence (or Marine Wildlife Licence) will also be applied for in the case of UXO clearance being required. The MMO welcomes this approach.</p> <p>For both piling and UXO clearances the MMO recommends early discussion on reducing the noise at source as much as possible and potential mitigation. Due to the development within English waters increasing, new policies and requirements may be required by developers and the MMO advises that these options are researched and are included in the Pre-Application documents and discussions. The MMO understands that SSE are part of wider discussions and welcomes this.</p>	Acknowledged. The Applicant will ensure all relevant policies and requirements are adhered to within the DCO application.
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Underwater noise: physical and auditory injury and behavioural impacts resulting from impact piling during construction - operation and decommissioning</u></p> <p>It is noted that this impact would only occur during the operational phase. The Inspectorate is content that this matter can be scoped out of further assessment at the construction and decommissioning stages.</p>	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

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Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Underwater noise: physical and auditory injury and behavioural impacts resulting from operational wind turbine noise - construction and decommissioning</u></p> <p>It is noted that this impact would only occur during the operational phase. The Inspectorate is content that this matter can be scoped out of further assessment at the construction and decommissioning stages.</p>	Acknowledged.
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Changes to water quality (increased suspended sediment) (with the exception of impacts to prey resource) – all phases</u></p> <p>Regarding increased suspended sediments, the Inspectorate is content that impacts on marine mammals (with the exception of impacts to prey resource, which is scoped in) are not likely to result in significant effects and can be scoped out.</p>	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Changes to water quality (sediment bound contaminants) in the Array Area - all phases</u></p> <p>For the reasons set out in row ID 3.2.2 above, the Inspectorate agrees this matter can be scoped out.</p> <p><i>3.2.2: Scoping Report paragraph 347 states that site specific sediment surveys including chemical contaminants were undertaken as part of the benthic surveys in Q3 2023. Sampling locations in the Array Area are identified on Figure 7-7. The results are provided in Scoping Report Appendix C, which demonstrate that contamination concentrations are low compared to the Centre for Environment, Fisheries and Aquaculture Sciences (Cefas) Action Levels in the Array Area. The sediment is characterised as largely coarse and sandy in the Array Area and therefore less able to retain contaminants compared to finer sediment. Coarse sediment also disperses less and settles quicker as demonstrated by modelling previously undertaken for Dogger Bank C and Sofia Offshore Wind Farm, which are also located on Figure 7-7. All coatings and treatments, chemical transport and vessels will comply with standard best practice measures controlled through the Project Environmental Management Plan (PEMP).</i></p> <p><i>The Scoping Report also identifies that scour would be localised, would reach equilibrium and cease over time.</i></p> <p><i>On the basis of low-level contamination presence, the coarse nature of the sediment and the proposed best practice measures, the Inspectorate agrees this matter can be scoped out.</i></p> <p><i>A summary of the results from the sediment samples should be provided as an addendum to the ES.</i></p>	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Changes to water quality (sediment bound contaminants) in the offshore ECC - operation and Decommissioning</u></p> <p>In line with comments in row ID 2.1.13 above, the Inspectorate considers that the maintenance activities required for operation are not fully described in the Scoping Report and the parameters are unknown.</p> <p><i>2.1.13: The Applicant should make effort to identify the location of the port and operation and maintenance base, where possible, and assess any (Likely Significant Effect (LSE) associated. In the event that the location/s cannot be confirmed, the ES should explain the assumptions and worst-case scenario which have informed the assessment.</i></p> <p><i>The ES should provide a full description of the nature and scope of operation and maintenance activities, including types of activity, frequency, and how works will be carried out for both offshore and onshore components. This should include consideration of potential overlapping of activities with those required for the continuing operation of existing wind farms in the area and construction of those proposed.</i></p> <p>Scoping Report paragraph 141 states that it is not yet determined whether cables would be removed on decommissioning of the Proposed Development or left in situ.</p> <p>It is also noted from Scoping Report paragraph 563 that this matter is scoped in for construction. Further sediment sampling is being undertaken.</p>	<p>As the port locations are currently unknown, an indicative assessment, assuming the worst-case, has been undertaken for the potential for vessel disturbance due to transiting vessels.</p> <p>Section 12.7.1.4, Section 12.7.2.4, and Section 12.7.3 of Volume 1, Chapter 12 Marine Mammals presented these assessments for construction and operation, respectively. Effects during and decommissioning are expected to be of similar levels as during construction.</p> <p>An assessment for the potential for effect on marine mammals due to the re-mobilisation of existing contaminated sediments in the offshore ECC, of which no contaminants were noted in the benthic surveys, has been undertaken for construction (Section 12.7.1.9), operation (Section 12.7.2.9), and decommissioning (Section 12.7.3) in Volume 1, Chapter 12 Marine Mammals.</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
		The Inspectorate does not consider that effects from remobilisation of existing contaminated sediments in the offshore export cable corridor (ECC) during operation and decommissioning can be scoped out at this stage. The ES should provide an assessment where significant effects are likely to occur, or information demonstrating agreement with the relevant consultation bodies and the absence of a LSE.	
Planning Inspectorate	Scoping Opinion (02/08/24)	<u>Physical barrier effect -construction and decommissioning</u> The Inspectorate agrees that significant physical barrier effects are unlikely to arise during the construction and decommissioning phases and can be scoped out of the assessment.	Acknowledged.
Planning Inspectorate	Scoping Opinion (02/08/24)	<u>EMF - all phases</u> This matter is proposed to be scoped out on the basis of an absence of evidence to date that marine mammal activity will change as a result of the presence of increased electromagnetic field (EMF) in the environment from inter-array cables, and the magnetic field intensities reducing with distance from the cable. The Inspectorate is content to scope this matter out of further assessment on this basis.	Acknowledged.
Planning Inspectorate	Scoping Opinion (02/08/24)	<u>Management Units (MU)</u> The ES should also include a further figure presenting the full extent of the relevant marine mammal MU with clear labelling.	A figure showing the full extent of the MUs is provided in Appendix 12.2 Marine Mammals Technical Report (Figure 12.2-1 and Figure 12.2-2) .

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Impacts from UXO</u></p> <p>See comments in Table 2.1 above (Ref 2.1.15).</p> <p><i>2.1.15: The Inspectorate notes that separate Marine Licence application(s) will be made prior to construction for UXO investigation and clearance works, with an accompanying assessment of UXO clearance impacts on relevant receptors. The Scoping Report states that any assessments for UXO clearance in the EIA will be for information only and are not part of the DCO application.</i></p> <p><i>The Inspectorate understands that the number, type and size of UXO devices is not known at this stage and that a detailed UXO survey will be conducted prior to construction.</i></p> <p><i>The Inspectorate advises that the ES should still include a high-level assessment in relevant aspect chapters based on a likely worst-case scenario (any assumptions used in the definition of the worst-case scenario should be explained in the ES). The ES should address any cumulative effects from the construction of the Proposed Development with the likely effects from the UXO clearance.</i></p>	A high-level assessment (based on a likely worst-case scenario) for the potential for UXO clearance has been undertaken and provided in Appendix 12.4 Unexploded Ordnance Assessment .
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Underwater noise modelling</u></p> <p>The Scoping Report states it is expected that the proposed underwater noise modelling will be undertaken using the Southall <i>et al</i> (2019) thresholds. This is the current best practice. The Applicant is advised to seek to agree the underwater noise modelling with relevant consultation bodies, such as the MMO and Natural England.</p>	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Potential impacts – disturbance effects from underwater noise</u></p> <p>The Scoping Report confirms that where a dose response curve approach is not possible due to a lack of information, the potential for disturbance will use reported and observed disturbance ranges wherever there is the information to do so, and a review will be undertaken. This approach is welcome. However, it also states that where there is no information on potential disturbance ranges, then Temporary Threshold Shift (TTS) may be used to inform the disturbance assessment as a proxy for disturbance. This approach is not supported by the MMO or advised by Natural England (see responses at Appendix 2 to this Opinion). The MMO has advised that to quantify the risk of behavioural responses where there are no better alternatives, the Effective Deterrence Ranges (EDRs) in place for noise management in harbour porpoise SACs. The ES should contain an assessment based on an approach which has been agreed with Natural England and the MMO.</p>	Acknowledged. TTS has not been used as a proxy to assess for disturbance from piling. Where EDRs or documented disturbance ranges and dose-response curves are not available for certain species, such as dolphins, the EDR and dose-response curve recommended for harbour porpoise has been applied (see Section 12.7.1.2.2.1.2 and Section 12.7.1.2.2.2 in Volume 1, Chapter 12 Marine Mammals).
Planning Inspectorate	Scoping Opinion (02/08/24)	<p><u>Mitigation</u></p> <p>Paragraph 211 of the Scoping Report confirms that draft or outline copies of relevant mitigation and management plans will be appended to the ES and / or submitted with the DCO application as relevant. It is unclear whether these would include a draft Marine Mammal Mitigation Plan (MMMP) or Draft / In Principle Site Integrity Plan (SIP). It is recommended that a draft MMMP and Draft / In Principle SIP are provided with the DCO application, as relevant.</p>	A Draft Outline MMMP will be submitted with the DCO application outlining all mitigation options.
Natural England	Scoping Opinion (02/08/24)	We agree with the information presented here to characterise the existing environment but would expect a more thorough and complete assessment in the PEIR / ES.	Acknowledged. A full baseline description has been provided in Appendix 12.2 Marine Mammals Technical Report .

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Scoping Opinion (02/08/24)	We are broadly in agreement with the potential impacts identified. We note that seabed disturbance has not been specifically mentioned but is linked to 'Changes in Prey Resource' which is identified and will be scoped into the EIA. This is linked strongly to Conservation Objective 3 of the Southern North Sea SAC ("The condition of supporting habitats and processes, and the availability of prey is maintained").	Acknowledged. This has been considered within the RIAA (document reference 5.3).
Natural England	Scoping Opinion (02/08/24)	We are broadly in agreement with the marine mammal impacts that have been scoped in for further consideration.	Acknowledged.
Natural England	Scoping Opinion (02/08/24)	We are broadly satisfied with the key datasets listed to inform the marine mammal baseline but also recommend the inclusion of the UK Cetacean Stranding Investigation Programme (CSIP), details of which can be found in Annex C Section 7.6.	Acknowledged. A review of the CSIP data has been provided within Section 12.7.1.7 of Volume 1, Chapter 12 Marine Mammals .
Natural England	Scoping Opinion (02/08/24)	We agree with the proposed approach to assessment presented but would expect a more thorough approach to assessment to be evidenced within the PEIR / ES.	Acknowledged. The approach to assessment has been described in Section 12.5.3 of Volume 1, Chapter 12 Marine Mammals .
Natural England	Scoping Opinion (02/08/24)	We advise that bottlenose dolphin should be scoped in for all areas in the assessment.	Acknowledged. Bottlenose dolphin have been scoped in for all areas of assessment, with separate assessments provided for the Coastal East Scotland MU and Greater North Sea MU, to take account of their known ranges.
Natural England	Scoping Opinion (02/08/24)	We advise the Applicant to conduct a review of the list of species once the full results of the site-specific surveys have been analysed.	Acknowledged. The final list of species scoped in for assessment has been based on the full results of the aerial surveys, as well as desk-based sources.
Natural England	Scoping Opinion (02/08/24)	There are seven species listed here - to note.	Noted.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Scoping Opinion (02/08/24)	Due to the maximum foraging ranges of grey and harbour seals (Carter <i>et al.</i> , 2022) Natural England advise that the seal management units 8 (Northeast England) and 9 (Southeast England) are scoped in for this project.	Acknowledged, both the Northeast and Southeast England MUs are included for the grey and harbour seal reference population (see Section 12.6.7 for grey seal and Section 12.6.8 for harbour seal in Volume 1, Chapter 12 Marine Mammals).
Natural England	Scoping Opinion (02/08/24)	All the relevant designated sites (or the proposed method of screening these in) have not been presented in detail in this report. Natural England reserve the right to comment on this further when this information is presented in the HRA screening report.	Acknowledged.
Natural England	Scoping Opinion (02/08/24)	<p>We support the decision to apply for an EPS licence for UXO clearance. We advise that an EPS license for piling is also applied for.</p> <p>Whilst we appreciate that the number or type of UXO clearance, if any, are not yet known at this stage, we would suggest that this activity is scoped into the assessment owing to the wide Effective Deterrence Ranges (EDR) (EDR, JNCC 2020) of this activity, and the fact that the potential for such explosives within the Southern North Sea SAC is currently unknown. We advise the Applicant to draw upon monitoring conducted for previous UXO campaigns in the Dogger Bank Zone to source empirical information on potential impacts on the SNS SAC.</p>	<p>An EPS Risk Assessment for piling would be undertaken in order to ascertain whether an EPS licence would be required, and an application made if necessary.</p> <p>An indicative UXO assessment has been provided in Appendix 12.4 Unexploded Ordnance Assessment.</p>
Natural England	Scoping Opinion (02/08/24)	With regards to the UXO assessment and what we would expect it to include, please refer to Natural England's Best Practice advice to Offshore Wind (Phase III) (Parker <i>et al.</i> , 2022c).	Acknowledged. The Phase III guidance has been followed where relevant.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Scoping Opinion (02/08/24)	We do not advise the use of TTS range as a proxy for disturbance given that TTS occurs at higher sound exposures and so will underestimate the risk of disturbance. We advise the Applicant to review the evidence base to determine an appropriate approach to assessing disturbance from construction activities.	Acknowledged. TTS has not been used as a proxy for disturbance in any assessments within Volume 1, Chapter 12 Marine Mammals . Note that TTS has been used to inform the indicative UXO assessment provided in Appendix 12.4 Unexploded Ordnance Assessment .
Natural England	Scoping Opinion (02/08/24)	We agree with change to prey resources being scoped into the EIA, especially considering the potential for impacts within the Southern North Sea SAC due to seabed disturbance from cable laying, which is strongly linked to Conservation Objective 3 of the Southern North Sea SAC.	Acknowledged.
Natural England	Scoping Opinion (02/08/24)	<p>The following should be scoped into the assessment:</p> <ul style="list-style-type: none"> • Underwater noise: physical and auditory injury resulting from noise associated with other construction and maintenance activities (such as dredging and rock placement) and vessel noise • Natural England note the inclusion of best practice measures for all vessel movements but advise that vessel interaction / collision risk is still scoped into the assessment for all stages of development. Refer to: Benhemma-Le Gall <i>et al.</i> (2019) (Frontiers Broad-Scale Responses of Harbor Porpoises to Pile https://www.frontiersin.org/articles/10.3389/fmars.2021.664724/full Driving and Vessel Activities During Offshore Windfarm Construction (frontiersin.org)) • Physical barrier effects should be scoped into the assessment and considered further. 	Acknowledged, all noted potential effects are scoped in and assessed in Volume 1, Chapter 12 Marine Mammals .

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Natural England	Scoping Opinion (02/08/24)	<p>"2023 comments</p> <p>We are broadly satisfied with the key datasets listed to inform the marine mammal baseline but recommend the following are also included:</p> <ul style="list-style-type: none"> • Updated Management Units for cetaceans in UK waters (Inter-Agency Marine Mammal Working Group (IAMMWG), 2023) Review of Management Unit boundaries for cetaceans in United Kingdom (UK) waters (2023) JNCC Resource Hub. • There is a more recent version of Small Cetacean in the Atlantic and North Sea (SCANS) -III that should be used (Hammond <i>et al.</i>, 2021). • We also recommend including for cetaceans: <ul style="list-style-type: none"> - MARINELife surveys from relevant ferry routes (MARINELife, 2021) - UK Cetacean Stranding Investigation Programme (CSIP) - Heinänen, S. & Skov, H 2015. The identification of discrete and persistent areas of relatively high harbour porpoise density in the wider UK marine area, JNCC Report No.544 JNCC, Peterborough. - Joint Cetacean Data Protocol (JCDP) is now available and may also be used as an additional data source. This succeeds the Joint Cetacean Protocol (JCP). • We recommend to include for seals: <ul style="list-style-type: none"> - Studies using seal telemetry data (e.g. Sharples <i>et al.</i>, 2008, 2012; Russel and McConnell, 2014; Vincent <i>et al.</i>, 2017). - Juvenile telemetry data (Carter <i>et al.</i>, 2017) <p>2024 comments:</p> <p>We note that all of these datasets have all now been considered by the Applicant, with the exception of UK Cetacean Stranding Investigation Programme (CSIP) (Heinänen, S. & Skov, H 2015).</p>	Acknowledged. Some of the suggested datasets have been included within the baseline assessment (Appendix 12.2 Marine Mammal Technical Report).
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APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
		We maintain our recommendation that this too should used to inform the baseline."	
Natural England	Scoping Opinion (02/08/24)	<p>"We advise that the following mitigation documents should be provided at the DCO application stage:</p> <ul style="list-style-type: none"> • MMMP (Marine Mammal Mitigation Plan) • Draft / In Principle SIP (Site Integrity Plan) if undertaking noisy activities that produce impulsive, high intensity noise within the relevant impact range, known as the Effective Deterrence Range (EDR), of a harbour porpoise SAC." 	A Draft MMMP and In Principle SIP will be submitted with the DCO application outlining all mitigation options to reduce impacts from underwater noise due to piling.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Scoping Opinion (02/08/24)	<p>"The ES should assess the impact of all phases of the proposal on protected species (including, for example, pinnipeds (seals), cetaceans (including dolphins, porpoises whales), fish (including seahorses, sharks and skates), marine turtles, birds, marine invertebrates, bats, etc.)... Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, NBN Atlas, groups and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.</p> <p>The conservation of species protected by law is explained in Part IV and Annex A of Government Circular 06/2005 Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System. The area likely to be affected by the proposal should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.</p> <p>In order to provide this information, there may be a requirement for a survey at a particular time of year. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and where necessary, licensed, consultants."</p>	<p>Volume 1, Chapter 12 Marine Mammals has assessed all phases of the Project.</p> <p>Site-specific surveys have been undertaken following best practice, as outlined in Appendix 12.2 Marine Mammal Technical Report.</p>
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	Natural England agree with the density estimates proposed to be used at PEIR across all species, the five cetacean species, and welcome that the site-specific highest density has been selected for harbour porpoise.	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	<p>Natural England are concerned by the lack of evidence base to support the Project's underwater noise (UWN) for their worst-case scenario pile diameter of 18m, on the basis that real-life existing noise data is limited to significantly smaller pile diameters. We caution against extrapolating impact predictions from these smaller piles and instead advise that a precautionary approach is applied to the parameters within the model. We defer to Cefas for further advice on this subject.</p> <p>Natural England strongly advise that the underwater noise is modelled and presented at PEIR with Noise Abatement System (NAS) options included. We have advised the use of NAS on all projects within the Dogger Bank Zone since 2020, and this position is reinforced by DEFRA's incoming policy statement which will set out the requirement for projects to have NAS in place for piling campaigns from January 2025 onwards. We expect this paper to be Date: 14 November 2024 released by the end of November 2024 but note that developers have been made aware of the incoming policy change since Spring 2024. It is therefore within the Project's best interest to frontload the modelling of UWN with NAS options at PEIR, to allow enough time to consider appropriate NAS options, especially as previous projects have highlighted the difficulty in procuring and financing NAS at short notice.</p> <p>We also note that the Project's worst-case scenario (WCS) pile diameter was presented as 18.5m during the more recent Marine Processes ETG1 Meeting 3 (30.10.24), as opposed to 18m suggested in ETG3. We would welcome clarity on whether this reflects an increase in WCS diameter size.</p> <p>Natural England reserve comment on the disturbance sensitivity assigned to species until we have seen the Project's approach to defining the sensitivity matrices.</p>	<p>Further information on the derivation of the piling noise source data used to inform the underwater noise modelling is provided in Section 3.1 of Appendix 12.3 Underwater Noise Modelling Report. The proposed approach would be agreed and outlined In Principle Monitoring Plan (application ref: 8.23).</p> <p>Underwater noise modelling has not been undertaken with NAS in order for the Project to determine and assess the worst-case underwater noise related effects to marine mammals. Underwater noise modelling with NAS will subsequently be undertaken prior to DCO submission in order for the Project to understand the potential reduction in effect, and to make an informed decision on the use of NAS in line with the latest policy statements and guidelines. Note that at the time of writing, the referenced policy statements and guidance are not available.</p> <p>For monopiles, the worst-case pile diameter is 18m. A full worst-case Project description is provided in Section 12.4.4 of Volume 1, Volume 1, Chapter 12 Marine Mammals.</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	<p>Natural England recommend using dose-response curves to assess piling disturbance for harbour porpoises. iPCoD is an interim assessment, and its outputs need to be interpreted with caution due to all the assumptions and uncertainties around its estimates. Therefore, the results of iPCoD models should not be the sole basis for any decision and should not supersede the results obtained from more precautionary approaches.</p> <p>We welcome that TTS thresholds will not be used for estimating piling disturbance for any species. We also advise that harbour porpoise EDR thresholds should be used for estimating UXO disturbance for dolphins, rather than TTS.</p>	<p>For all species, multiple methods of determining effect significance due to disturbance from piling have been provided in Section 12.7.1.2.3 of Volume 1, Chapter 12 Marine Mammals. For harbour porpoise, this includes the use of dose-response curves, EDRs, and iPCoD. The final effect significance is based on the results of all methods, rather than solely on iPCoD, although it should be noted that iPCoD is the only method that provides an assessment of the long-term consequences of disturbance.</p> <p>Regarding the use of TTS as a proxy for disturbance for UXO clearance, this approach has been used for a number of species (including harbour porpoise, minke whale, and seal species). As outlined in Southall <i>et al.</i> (2007), the use of TTS as a proxy for disturbance from explosives is appropriate for single pulses; “<i>for the unique condition of a single pulse, an auditory effect is used as a de facto disturbance criterion. It is assumed that significant behavioural disturbance might occur if noise exposure is sufficient to have a measurable transient effect on hearing (i.e. TTS-onset). Although TTS is not a behavioural effect per se, this approach is used because any compromise, even temporarily, to hearing functions has the potential to affect vital rates by interfering with essential communication and / or detection capabilities. This approach is expected to be precautionary because TTS at onset levels is unlikely to last a full diel cycle or to have serious biological consequences during the time TTS persists.</i>”</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	<p>We acknowledge the evidence that the Project have provided to propose that the disturbance buffer for transiting vessels should be 2km rather than 4km. However, Natural England disagree with this position on the basis that Benhema-Le Gall <i>et al</i> (2021) found a 35 % displacement rate at 2km. Based on visual observations, Pigeault <i>et al</i> (2024) found harbour porpoise vessel avoidance up to 5km (up to 9km avoidance of areas frequented by numerous vessels). We therefore maintain our recommendation that a minimum of 4km range disturbance should be used for both construction and transiting vessels.</p> <p>We welcome that potential disturbance to grey seal sites at Filey Brigg and Donna Nook will be considered until further details on port locations are known.</p>	Acknowledged. A 4km disturbance range has been used for the assessment as presented in Section 12.7.1.4 in Volume 1, Chapter 12 Marine Mammals.
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	Natural England would welcome more detail on the proposed approach to modelling collision risk before providing agreement, particularly with regards to how project-related traffic will be considered.	A qualitative assessment for collision risk is provided in Section 12.7.1.7 and Section 12.7.27 of Volume 1, Chapter 12 Marine Mammals.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	<p>Natural England are supportive of the proposed 6-month cut-off for scoping in projects to the cumulative effect assessment ahead of PEIR.</p> <p>We agree with the approach to scoping in Projects for construction / piling but highlight that where subsea cables and pipelines have been scoped out here, we would still expect to see any UXO clearance works associated with these to be included within the CEA of the separate UXO licence application.</p> <p>We agree with the projects scoped in for assessment of cumulative operational noise, except for noting that Dogger Bank South has not been included. We expect this is an accidental omission which will be corrected ahead of PEIR.</p>	<p>Acknowledged. Any separate UXO clearance campaigns that have been applied for / consented would be screened through the Marine Licence search. Note that there are no current UXO applications screened for assessment, however, a generic UXO assessment has been included within the cumulative assessment (see Section 12.8.1.3.1.4 of Volume 1, Chapter 12 Marine Mammals).</p> <p>Dogger Bank South and other offshore wind farm projects have been reviewed and screened in for overlapping construction / piling periods. Only those projects not previously assessed for cumulative construction effects have been assessed for their operational phases. This approach prevents 'double counting' of the same individuals potentially disturbed, as the construction phase represents the worst-case scenario.</p>

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	<p>Natural England understand that the Project's proposed ADD durations are to last for as long as 76 minutes for monopiles. We would welcome further information into how this has been calculated and have concerns that this is very close to the limit of effectiveness in allowing harbour porpoise to flee the necessary 7.2km PTS zone. Again, we highlight the effectiveness of NAS in reducing the noise at source and also recommend that where feasible, the hammer energy during the soft start is reduced.</p> <p>Whilst we welcome the use of PAM, Natural England are not aware of examples where it has be used to monitor a radius as large as 700m, so we would welcome further consultation on how the Project's intend to apply PAM at this scale. We would also advise that if novel approaches to PAM are to be used, then trials should first be done in conditions with good visibility to understand the effectiveness.</p>	<p>Acknowledged. Further investigations into both the use of NAS and altered soft-start and ramp-up procedures will be made prior to the DCO submission, with underwater noise modelling, assessments, and the resultant mitigation, being updated to reflect any such decisions.</p> <p>Acknowledged. Further indicative detail on the options for monitoring a 700m area is provided within the Draft Outline MMMP.</p>
Natural England	Feedback from DBD ETG3 meeting 2 (14/11/24)	Natural England agree with the sites screened into the HRA for all marine mammal receptors.	Acknowledged.
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO will provide further advice upon review of the PEIR regarding the approach for data collection for the chapter.	Acknowledged.
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Regarding the agreement on worst-case density estimates and the reference populations proposed for use in the PEIR, as well as determining the inshore and offshore impact on bottlenose dolphins in the North Sea, Cefas and the MMO defer to Natural England and other relevant SNCBs for comments on this matter.	Acknowledged.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO agree on the approach to UXO consenting and inclusion in the applications taken for this EIA.	Acknowledged.
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and MMO are supportive of the use of underwater noise modelling using the Southall et al (2019) thresholds. They are aware that new guidance has been published by NOAA (National Marine Fisheries Service) although have not had chance to review this document in detail yet.	Acknowledged.
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and MMO welcome that for disturbance effects, where a dose response curve approach is not possible due to lack of information, the potential for disturbance will use reported and observed disturbance ranges wherever there is information to do so (including the Effective Deterrence Ranges (EDR) for harbour porpoise and the disturbance range for seal species due to piling as reported by Russell et al. (2016)).	Acknowledged. For all species, multiple methods of determining effect significance due to disturbance from piling have been provided in Section 12.7.1.2.3 of Volume 1, Chapter 12 Marine Mammals .
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO will provide further advice upon review of the PEIR (and in further consultation with MMO's scientific advisors) with regard to the proposed underwater noise disturbance sensitivities for minke whale and harbour porpoise as medium, and low for seals and dolphins.	The sensitivity for marine mammal receptors to disturbance assessments in Volume 1, Chapter 12 Marine Mammals is considered to be medium for all species.

APPENDIX 12.1 CONSULTATION REPONSES FOR MARINE MAMMALS

Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO do not support the use of TTS as a proxy for disturbance. Regarding UXO clearance. TTS constitutes a temporary reduction in the sensitivity of the auditory system. The characteristics of TTS are distinct from behavioural disturbance, in which an animal changes its behaviour in response to a stimulus. There is no cognitive impairment implicit in behavioural responses. TTS typically occurs at much higher sound exposures than the onset of behavioural disturbance, and so if behavioural disturbance is assumed to occur only at sound exposures where TTS would occur, this is likely to significantly underestimate the risk of disturbance. To quantify the risk of behavioural responses where there are no better alternatives, the EDRs in place for noise management in harbour porpoise SACs (Special Area of Conservation), could be used instead. 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).	For harbour porpoise, minke whale and seal, the TTS ranges exceeded the 26km EDR (as per JNCC <i>et al.</i> , 2010, 2023). Therefore, TTS has been used as a proxy for disturbance UXO clearance for these species. For dolphins, the 26km EDR for harbour porpoise SACs has been applied in the assessments in Volume 2, Appendix 12.4 Unexploded Ordnance Assessment , and carried through to Section 12.8.3.1.3.1 .
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO defer to Natural England and other relevant SNCB for comments on the proposition that disturbance buffer for transiting vessels should be 2km rather than 4km.	Acknowledged. A 4km disturbance range has been used for the assessment as presented in Section 12.7.1.4 in Volume 1, Chapter 12 Marine Mammals .
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Dependent upon the review of PEIR and further consultation with the MMO scientific advisers, Cefas and the MMO will give further advice on the general approach for disturbance to vessels and other activities.	Acknowledged.

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Stakeholder	Document / Meeting, Date	Comment	How and Where Addressed in the PEIR
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO defer to Natural England and other relevant SNCB for comments on the proposed approach for vessel collision risk.	Acknowledged. A qualitative assessment for collision risk is provided in Section 12.7.1.7 and Section 12.7.27 of Volume 1, Chapter 12 Marine Mammals .
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO defer to Natural England and other relevant SNCB for agreement on the proposed 6-month cut-off for scoping in projects to the cumulative effect assessment ahead of PEIR; as well as the reduced list of cumulative O&M OWFs screened in.	Acknowledged.
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO will give further advice on the approach to the MMMP for both impact piling and UXO clearance once they have reviewed the PEIR, Environmental Statement and underwater noise monitoring, and further consulted their scientific advisors.	Acknowledged. A Draft Outline MMMP will be submitted alongside the PEIR.
Cefas and MMO	Feedback from DBD ETG3 meeting 2 (14/11/24)	Cefas and the MMO defer to Natural England and other relevant SNCB with regard to the sites screened into the HRA for all marine mammal receptors.	Acknowledged.

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Acronyms

Term	Definition
ADD	Acoustic Deterrent Device
Cefas	Centre for Environment, Fisheries and Aquaculture Sciences
CSIP	Cetacean Stranding Investigation Programme
dB	decibels
DBC	Dogger Bank C
DBD	Dogger Bank D
DCO	Development Consent Order
ECC	Export Cable Corridor
EDR	Effective Disturbance Ranges
EMF	Electromagnetic Field
EPP	Evidence Plan Process
EPS	European Protected Species
ES	Environment Statement
ETG	Expert Topic Group
IAMMWG	Inter-Agency Marine Mammal Working Group
iPCoD	interim Population Consequences of Disturbance
JCDP	Joint Cetacean Data Protocol
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MMMP	Marine Mammals Mitigation Protocol
MMO	Marine Management Organisation
MU	Management Unit
NAS	Noise Abatement System

Term	Definition
NOAA	National Oceanic and Atmospheric Administration
PEIR	Preliminary Environmental Information Report
PEMP	Project Environmental Management Plan
SAC	Special Area of Conservation
SCANS	Small Cetacean in The Atlantic and North Sea
SEL _{ss}	Single-Strike Sound Exposure Level
SIP	Site Integrity Plan
SNCB	Statutory Nature Conservation Body
TTS	Temporary Threshold Shift
UK	United Kingdom
UWN	Underwater Noise
UXO	Unexploded Ordnance
VMP	Vessel Management Plans
WCS	Worst-Case Scenario