

Outer Dowsing Offshore Wind

The Applicant's Comments on Deadline 2 Submissions

Deadline 3

Date: December 2024

Document Reference: 20.2

Rev: 1.0

Company:		Outer Dowsing Offshore Wind		Asset:	Whole Asset	
Project:		Whole Wind Farm		Sub Project/Package:	Whole Asset	
Document Title or Description:		20.2 The Applicant's Comments on Deadline 2 Submissions				
Internal Document Number:		PP1-ODOW-DEV-CS-REP-0246		3 rd Party Doc No (If applicable):	N/A	
Rev No.	Date	Status / Reason for Issue	Author	Checked by	Reviewed by	Approved by
1.0	December 2024	Deadline 3	GoBe SLR Outer Dowsing	Outer Dowsing	Shepherd & Wedderburn	Outer Dowsing

Table of Contents

Acronyms & Definitions	3
Abbreviations / Acronyms	3
Terminology	3
1 Applicant’s Responses to Deadline 2 Submissions.....	5
References	74
Appendix A : Updates requested in RR-045 for Deadline Three	76
1.1 Introduction	76
1.2 Updates	76
1.2.1 Update to Table 12 of document AS1-099	76
1.2.2 Update to Table 4.21 of document PD1-081	78

Table of Tables

Table 1.1 The Applicant’s Comments on REP2-093 Natural England Cover Letter	6
Table 1.2 The Applicant’s Comments on REP2-093 Annex 1 in Natural England Cover Letter	7
Table 1.3: The Applicant’s Comments on REP2 -095 Response to Natural England’s Summary of Disagreements in Offshore Ornithology Assessment Methodology	12
Table 1.4: The Applicant’s Comments on REP2-092 MMO Comments on the Applicant’s Amended Application Documents.....	27
Table 1.5: The Applicant’s Comments on REP2-092 MMO Comments on Stakeholders Deadline 1 responses	51
Table 1.6: The Applicant’s Comments on REP2-092 MMO’s General Comments.....	67
Table 1.7: The Applicant’s Comments on REP2-090 Fosdyke Playing Fields Deadline 2 Submissions	70
Table 1.8: The Applicant’s Comments on REP2-089 Anthony Kindred Deadline 2 Submissions	71
Table 9 Detailed kittiwake apportioning results.....	76
Table 10: Comparison of mean impact values for collision mortality for Sandwich tern presented for ES and ORBA.....	78

Acronyms & Definitions

Abbreviations / Acronyms

Abbreviation / Acronym	Description
AEoI	Adverse Effect on Integrity
BDMPS	Biologically Defined Minimum Population Scales
CRM	Collision Risk Modelling
DAS	Digital Aerial Survey
DCO	Development Consent Order
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
ES	Environmental Statement
ExQ	Examining Questions
FFC	Flamborough and Filey Coast
GA	Gannet
GU	Guillemot
GW	Greater Wash
HPAI	Highly Pathogenic Avian Influenza
HRA	Habitat Regulations Assessment
JNCC	Joint Nature Conservation Committee
KI	Kittiwake
LBBG	Lesser Black Backed Gull
N/A	Not Applicable
NAFs	Nocturnal Activity Factor
NCC	North Norfolk Coast
NE	Natural England
O&M	Operations and Maintenance
ORBA	Offshore Restricted Build Area
ORCP	Offshore Reactive Compensation Platform
OTE	Outer Thames Estuary
PVA	Population Viability Analysis
RA	Razorbill
RIAA	Report to Inform Appropriate Assessment
RR	Relevant Representations
RTD	Red Throated Diver
SAS	Stable Age Structure
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
ST	Sandwich Tern

Terminology

Term	Definition
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation (and its affiliates), Total Energies and Gulf Energy Development (GULF)),

Term	Definition
	trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation, TotalEnergies and GULF.
Baseline	The status of the environment at the time of assessment without the development in place.
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor, in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory 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, which fulfils the assessment requirements of the EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the EIA.
Habitats Regulations Assessment (HRA)	A process which helps determine likely significant effects and (where appropriate) assesses adverse impacts on the integrity of European conservation sites and Ramsar sites. The process consists of up to four stages of assessment: screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of over-riding public interest (IROPI) and compensatory measures.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Maximum Design Scenario	The project design parameters, or a combination of project design parameters that are likely to result in the greatest potential for change in relation to each impact assessed
Offshore Export Cable Corridor (ECC)	The Offshore Export Cable Corridor (Offshore ECC) is the area within the Order Limits within which the export cables running from the array to landfall will be situated.
Offshore Reactive Compensation Platform (ORCP)	A structure attached to the seabed by means of a foundation, with one or more decks and a helicopter platform (including bird deterrents) housing electrical reactors and switchgear for the purpose of the efficient transfer of power in the course of HVAC transmission by providing reactive compensation
Offshore Restricted Build Area (ORBA)	The area within the array area, where no wind turbine generator, offshore transformer substation or offshore accommodation platform shall be erected.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure

1 Applicant's Responses to Deadline 2 Submissions

1. The Applicant has responded to each submission made by other parties at Deadline 2 in the tables below.

Table 1.1 The Applicant’s Comments on REP2-093 Natural England Cover Letter

Ref No	Deadline 2 Submission	Applicant Response
1. Natural England’s Deadline 2 Submissions	<p>For Deadline 2, Natural England has reviewed the documents relevant to our statutory remit submitted by the Applicant at Deadline 1 (24th October 2024). An update of Natural England’s position regarding these documents is provided in Annex 1, including anticipated timing of responses. Natural England is also submitting the following, signposted from Annex 1:</p> <ul style="list-style-type: none"> ▪ EN010130 494381 ODOW Appendix K - Natural England's Response to ExA's Written Questions 1 at Deadline 2 ▪ EN010130 494381 ODOW Appendix K1 – ExQ1 OR 1.2 - Summary of Disagreements in Offshore Ornithology Assessment Methodology ▪ EN010130 491137 ODOW Appendix J2 - Natural England's NE Risk and Issues Log Deadline 2 	The comment is noted by the Applicant.
2. Deferred responses	<p>As outlined within our previous written submissions, owing to the volume of documentation submitted since the Relevant Representations deadline, we continue to defer our response on the In-Principle Monitoring Plan (IPMP) [APP-245], in addition to the Outline Project Environmental Monitoring Plan (OPEMP) [APP-277] until a suitable juncture in the examination timetable.</p> <p>Natural England is awaiting a decision from the ExA regarding the outcome of the change request submitted by the Applicant in relation to the Offshore Restricted Build Area (ORBA). Therefore, no advice has been provided from Natural England in response to the ExA questions involving the ORBA, instead this will be</p>	The comment is noted by the Applicant. The Applicant notes the ORBA Change Request was accepted by the ExA as set out in its Rule 9 Letter dated 3 rd December 2024 (PD-015).

Ref No	Deadline 2 Submission	Applicant Response
	deferred to a later deadline once a procedural decision has been made. This has been indicated where appropriate in Appendix K.	
3. Offshore and Intertidal Ornithology	Natural England acknowledges that we had intended to provide full technical advice at Deadline 2, with the intension to have advised whether our concerns in relation to the impact assessments had been addressed, and if they had, provide advice on Offshore Ornithology impacts. However, because the change request for the ORBA has not yet been accepted by the ExA, this update will be postponed until an appropriate deadline. However, our Deadline 2 response Appendix K1 provides a summary table detailing the current state of play in regard to our impact assessment methodology concerns, which we hope both the ExA and the Applicant find useful.	This comment has been noted by the Applicant. The Applicant notes the ORBA Change Request was accepted by the ExA as set out in its Rule 9 Letter dated 3rd December 2024 (PD-015). The Applicant has responded to comments in Appendix K1 in The Applicant's Comments on Deadline 2 Submissions (Document Reference 20.2).
4. Benthic Ecology – Supporting habitat for Annex I Sabellaria spinulosa reef	Natural England will be providing further advice on potential impacts from cable installation on supporting habitat for Annex I Sabellaria spinulosa reef within Inner Dowsing, Race Bank and North Ridge SAC at Deadline 3.	This comment has been noted by the Applicant.

Table 1.2 The Applicant’s Comments on REP2-093 Annex 1 in Natural England Cover Letter

ID	Document Name	Deadline 2 Submission	Applicant Response
General			

ID	Document Name	Deadline 2 Submission	Applicant Response
REP1-001	18.1 The Applicant's Deadline 1 Covering Letter	Natural England has no comments to make on this document.	This comment has been noted by the Applicant.
REP1-002	1.2 Guide to the Application	Natural England has no comments to make on this document.	This comment has been noted by the Applicant.
REP1-003	2.0 Schedule of Changes for Plans	Natural England has no comments to make on this document.	This comment has been noted by the Applicant.
REP1-004	2.5 Land Plans (Part 1 of 2)	Natural England has no comments to make on this document.	This comment has been noted by the Applicant.
REP1-005	2.5 Land Plans (Part 2 of 2)	Natural England has no comments to make on this document.	This comment has been noted by the Applicant.
REP1-017	7.9 Compensation Funding Statement (tracked)	Natural England has no comments to make on this document.	This comment has been noted by the Applicant.
REP1-024	18.6 The Applicant's response to the ExA's request for further information in relation to the proposed ORBA and the revision to the Offshore ECC	Natural England has no comments to make on this document at Deadline 2.	This comment has been noted by the Applicant.
REP1-038	18.21 The Applicant's Change Notification	Natural England has no comments to make on this document at Deadline 2.	This comment has been noted by the Applicant.
REP1-039	18.22 The Applicant's Change Request dated 24 October 2024	Natural England has no comments to make on this document at Deadline 2.	This comment has been noted by the Applicant.

ID	Document Name	Deadline 2 Submission	Applicant Response
APP-276	8.3 Offshore In Principle Monitoring Plan	Please refer to Section 2 of this cover letter. Advice will be provided at the appropriate juncture during examination.	This comment has been noted by the Applicant.
DCO			
REP1-007	3.1 Draft Development Consent Order (tracked)	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
REP1-008	3.1.1 Schedule of Changes to the Draft Development Consent Order	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
PD1-025	3.1 Draft Development Consent Order Tracked	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
PD1-026	3.1.1 Schedule of Changes to the Draft Development Consent Order	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
PD1-028	3.2 Explanatory Memorandum Tracked	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
AS1-025	3.1 Draft Development Consent Order Tracked.pdf	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
AS1-026	3.1.1 Schedule of Changes to the Draft DCO.pdf	Natural England has provided an update in our Risks and Issues log in relation to this document	This comment has been noted by the Applicant.
Offshore and Intertidal Ornithology			

ID	Document Name	Deadline 2 Submission	Applicant Response
AS-001	Ornithology Population Viability Analysis Parameter Log.pdf	Natural England has not reviewed this document at this stage in light of the proposed ORBA.	This comment has been noted by the Applicant.
AS-005	Chapter12 Appendix 5 Migratory Collision Risk Modelling.pdf	Natural England has no comments to make on this document at Deadline 2	This comment has been noted by the Applicant.
AS1-041	6.1.12 Chapter 12 Offshore and Intertidal Ornithology Tracked.pdf	Natural England has no comments to make on this document at Deadline 2	This comment has been noted by the Applicant.
AS1-100	7.1.1 Offshore and Intertidal Ornithology Apportioning Tracked.pdf	Natural England has no comments to make on this document at Deadline 2	This comment has been noted by the Applicant.
Offshore Restricted Build Area (ORBA)			
PD1-081	15.9 Environmental Report for the Offshore Restricted Build Area (ORBA) and Revision to the Offshore Export Cable Corridor (ECC).pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-082	15.9A ORBA and Revision to the Offshore ECC Appendix A Figures Part 1.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-083	15.9A Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix A Figures – Procedural Deadline 19 September. Part 2 of 2.	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.

ID	Document Name	Deadline 2 Submission	Applicant Response
PD1-084	15.9B Procedural Deadline 19 September Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix B Blockage Modelling Results	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-085	15.9C ORBA and Revision to the Offshore ECC Appendix C Underwater Noise Modelling Report.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-086	15.9D ORBA and Revision to the Offshore ECC Ornithology Baseline Summary.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-087	15.9E ORBA and Revision to the Offshore ECC Appendix E Collision Risk Modelling.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-088	15.9F ORBA and Revision to the Offshore ECC Appendix F Offshore Ornithology Displacement Assessment.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-089	15.9G ORBA and Revision to the Offshore ECC Appendix G MRSea	Natural England will provide a response to this document once a procedural decision is made	This comment has been noted by the Applicant.

ID	Document Name	Deadline 2 Submission	Applicant Response
	Modelling for Offshore Ornithology.pdf	regarding the ORBA change request.	
PD1-091	15.10 HRA for the ORBA and Revision to the Offshore ECC.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.
PD1-092	15.10A HRA for the ORBA and Revision to the Offshore ECC Appendix A Offshore and Intertidal Ornithology Apportioning.pdf	Natural England will provide a response to this document once a procedural decision is made regarding the ORBA change request.	This comment has been noted by the Applicant.

Table 1.3: The Applicant’s Comments on REP2 -095 Response to Natural England’s Summary of Disagreements in Offshore Ornithology Assessment Methodology

Ref	Issue	NE’s Position	NE Explanation of Applicant’s Position		Now Resolved?	Applicant Response
			DCO Submission	19. Sept Submission incl. Response to RR		
Apportioning for HRA						
1	Use of theoretical generalised stable age structure (from Furness 2015) for adult	Not appropriate. Natural England’s (NE’s) position is to assume 100% adults or	Used stable age structure for guillemot, razorbill, puffin, lesser black-backed gull, Sandwich tern and common tern for	The Offshore Restricted Build Area (ORBA) documents presents both Applicant’s approach (stable age structure) and NE’s, which is now corrected to not use stable	Yes, for ORBA docs only.	The Applicant welcomes Natural England’s recognition that this issue has been resolved for the ORBA documents. The Applicant maintains its position that the use of

Ref	Issue	NE's Position	NE Explanation of Applicant's Position	Now Resolved?	Applicant Response	
			DCO Submission	19. Sept Submission incl. Response to RR		
	apportioning	calculate adult proportions from site-specific digital aerial survey (DAS) data.	apportioning of adults in the breeding season	age structure (SAS), as outlined in the Applicant's Response to NE's Relevant Representations [PD1-071].		theoretical generalised stable age structure (from Furness 2015) for adult apportioning is appropriate and that the Applicant's approach should be preferred. The Applicant's apportioning methodology is provided in document AS1-099).
2	Apportioning of Guillemot (GU) to Flamborough and Filey Coast (FFC)	100% in breeding season (March to July), bespoke chick rearing and moult (August & September) apportioning rate of 68.5% (please see Appendix 2 of our Relevant Representations [RR-045]), Biologically Defined	57% adults (stable age structure) and 50% to FFC in breeding season, 4.4% in non-breeding season.	ORBA docs presents both Applicant's approach and NE's, as outlined in their Response to NE's Relevant Representations [PD1-071].	Yes, for ORBA docs only.	The Applicant welcomes Natural England's recognition that this issue has been resolved for the ORBA documents. The Applicant maintains its position that the apportionment of 57% adults, 50% to the FFC in the breeding season and 4.4% in the non-breeding season is appropriate and that the Applicant's approach should be preferred. The Applicant's methodology for

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
		Minimum Population Scales (BDMPS) approach (4.41%) for non-breeding season (Oct to Feb).				apportioning is provided in document AS1-099.
3	Apportioning of Razorbill to FFC	100% in breeding season (April to July), bespoke postbreeding migration (August to October) apportioning rate of 70.6% (please see Appendix 2 of our RR), BDMPS approach (3.4%) for prebreeding migration (January to March), BDMPS approach (2.7%)	57% adults (stable age structure) and 100% to FFC in breeding season, 3.4% in pre-breeding and post-breeding migration, 0.91% in nonbreeding/winter.	The ORBA documents present the Applicant's approach (stable age structure, 100% to FFC in breeding season) but does not present NE's full approach (BDMPS apportioning rate during the nonbreeding season has been corrected from 0.91% to 2.74%, but the bespoke postbreeding migration rate of 70.6% to FFC has not been incorporated), despite the Applicant's response to our Relevant Representations [PD1-071], comment F36 and	No	The Applicant's position remains that 100% adult apportioning is not appropriate, and that the stable age structures presented in Furness (2015) are the best available evidence regarding adult proportions (see Applicant's comments on Submissions received at Deadline 1 (REP 2-053, F2.0). The bespoke post-breeding apportioning as advised by Natural England can be used when updating the in-

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
		for non-breeding season (Nov-Dec).		the statement within the Habitat Regulations Assessment (HRA) ORBA [PD1-091] paragraph 65 that "The approach to non-breeding season apportioning is identical [for the Applicant and Natural England] with the exception of guillemot".		combination assessment (which will be provided at Deadline 4).
4	Exact method of calculating adult proportions using DAS data (applicable to gannet (GA), Kittiwake (KI) & lesser blackbacked gull (LBBG)).	Submitted at Deadline 1 (D1) (see F1.2 in Table 1 of Appendix F1 to NE's D1 submission [REP1-061]). Follow Morgan method of calculating proportion of adults from DAS data. This would produce adult apportioning	Method not described by Applicant. Rates of 91% for KI and 93% for GA, rate of 60% for LBBG based on stable age structure (Furness 2015).	ORBA documents describe how adult proportions have been calculated from DAS data (using a method we do not think is valid - see F1.2 in Table 1 of Appendix F1 to NE's D1 submission [REP1- 061] and presents rates for GA (86%), KI (90%) and LBBG (50%).	No - ExQ requesting Applicant to provide an updated assessment using proportions submitted by NE at D1 (see NE's position column).	The Applicant is content that the rates used to date are suitable for all three species. The Applicant can update the assessment based upon the Natural England preferred approach to the calculation of adult proportions at Deadline 4 if required (see Applicant's comments on Submissions received at Deadline 1 (REP 2-053, F2.1).

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
		rates of 90% for GA, 91% for KI and 66% for LBBG.				
5	Inclusion of offshore breeders for KI - unclear what apportioning rate has been used (61.3% or 64%) and how it has been calculated.	Agree with inclusion of offshore breeders in apportioning calculations using NatureScot method but would like the Applicant to confirm rate used and how it has been derived.	Table 11 of the Report to Inform Appropriate Assessment (RIAA) Annex 1 (Apportioning) [AS1-099] shows 61.3%	The ORBA documents show conflicting rate. Table 8.1 in HRA ORBA Appendix A (Apportioning) [PD1- 092] shows 61.3% (as per Table 11 of the RIAA [AS1-099]) however Table 6.2 and para 80 suggest a rate of 0.64. This discrepancy may be due to the exclusion/inclusion of the Filey 2 colony (excluded in Table 11 of the RIAA but included in Table 6.2 of the HRA ORBA).	No. However the differences in rates are unlikely to make a material difference to the overall predicted impact and conclusions of the assessment.	The full apportioning table for kittiwake, including offshore breeding birds, has been included as 0 of this document (updates will be incorporated into AS1-099 when it is updated at Deadline 4). The Applicant notes that the apportioning table is Table 12 of Annex 1 (Apportioning) (AS1-099) of the RIAA (AS1-095) (also see Applicant's comments on Submissions received at Deadline 1 (REP 2-053, F2.10).
Population Viability Analysis (PVA)						
6	Burn in for PVA	Submitted at Relevant	Burn in for all species except LBBG	The Applicant states that they had ran a preliminary	No - PVA has not been rerun.	A revised PVA, including burn in, will be provided

Ref	Issue	NE's Position	NE Explanation of Applicant's Position	Now Resolved?	Applicant Response	
		Representations (see F25 in Table 2 of Appendix F to NE's Relevant Representations [RR-045]) Burn in of 5 years for all species.	DCO Submission	19. Sept Submission incl. Response to RR		
				PVA with and without burn in and found no difference, and therefore do not feel it necessary to update their PVA.	Whilst this may not make a substantial difference to the PVA outputs, this nonetheless represents a departure from Natural England's best practice advice	at Deadline 4, and results included within the updated in-combination assessment (also see Applicant's comments on Submissions received at Deadline 1 (REP 2-053, F2.14).
Red-Throated diver & common scoter						
7	Not assessing vessel impacts on red-throated diver and common scoter during the Operations and Maintenance (O&M) phase	Submitted at Relevant Representations (see F31 in Table 2 of Appendix F to NE's Relevant Representations [RR-045])) that full consideration should be given to the potential for displacement	RIAA Table 7.1 (LSE) [AS1-096] did not include direct disturbance and displacement within the Export Cable Corridor (ECC) as a result of vessel movements during the O&M phase for the Greater Wash SPA redthroated diver and common scoter features	No further detail provided within ORBA documents with regards to the potential for vessel movements during the O&M phase to cause disturbance and displacement to red-throated diver and common scoter.	No	The Applicant retains the position that the impacts on RTD from vessel movements during the O&M phase will be lower than those during construction and decommissioning phases. The assessment of vessel impacts on red-throated diver and common scoter during construction and decommissioning concluded no adverse

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
		and disturbance to red-throated diver and common scoter within the Greater Wash Special Protection Area (SPA) during the O&M phase as a result of vessel movements.				effect on integrity. The Applicant considers that the assessment provided in the Report to Inform Appropriate Assessment (RIAA) (AS1-095) remains valid and that there is no Adverse Effect on Integrity (AEol).
8	Not assessing presence of ORCP within Greater Wash (GW) SPA during the O&M phase for red-throated diver and common scoter	Submitted at Relevant Representations (see F31 in Table 2 of Appendix F to NE's Relevant Representations [RR-045]) that full consideration should be given to the potential for displacement	RIAA Table 7.1 (LSE) [AS1-096] did not include direct disturbance and displacement within the ECC as a result of the presence of the ORCP within the GW SPA during the O&M phase for the red-throated diver and common scoter features	Further detail provided within ORBA documents that consider the potential for the ORCPs to cause displacement to red-throated diver (RTD) and common scoter, including comparison with static structures within the Outer Thames Estuary	This is no longer a disagreement re. assessment methodology as such, but rather the specific conclusions of that assessment, particularly that the ORCPs will be located in areas of low density of redthroated diver, and that a	The Applicant welcomes Natural England's agreement that impacts to common scoter are likely to be minimal. The Applicant maintains its position that the proposed ORCP area is within an area of low density RTD. Please see the Applicant's comments on Submissions received at Deadline 1 (REP 2-053, F2.8).

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
		<p>and disturbance to red-throated diver within the GW SPA due to the permanent presence of the ORCPs within the SPA. Alternative locations for the ORCP outside the SPA should be considered.</p>			<p>direct comparison can be made between the ORCPs and the static structures within the Outer Thames Estuary (OTE) referenced in the ORBA documents. Our remaining concerns are for impacts to red-throated diver; Natural England are satisfied that impacts to common scoter are likely to be minimal. We understand that the Applicant will be submitting further information on</p>	<p>The Applicant is undertaking a technical engineering review to reduce the parameters used for the ORCP maximum design scenario and will submit updated information to the Examination at Deadline 4.</p>

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
					this matter in due course.	
9	Only calculating impact to the red-throated diver feature of the Greater Wash SPA in terms of mortality not also area affected in both km and % of the SPA.	Submitted at D1 (see F1.9 in Table 1 of Appendix F1 to NE's D1 submission [REP1- 061]). Assessment of the potential for the ORCP's to cause displacement to RTD should consider both the estimated mortality, and the area (km2) and the proportion of the SPA where RTDs have the potential to be displaced from	N/A. ORCP not scoped in (see item 9).	Further detail provided within ORBA documents that consider the potential for the ORCPs to cause displacement to RTD and common scoter, including comparison with static structures within the Outer Thames Estuary, which concludes no AEoI . This does not include an estimate of displacement mortality, or the area of the SPA from which RTDs are displaced.	No. Awaiting response/further documents from the Applicant following our request at Deadline 1.	The Applicant is undertaking a technical engineering review of the parameters used for the ORCP maximum design scenario and will submit updated information to the Examination at Deadline 4. Please see Applicant's comments on Submissions received at Deadline 1 (REP 2-053, F2.8)

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
		by such a structure.				
Bioseasons						
10	Incorrect breeding seasons for Sandwich Tern (ST) and gannet (full breeding season not used)	Full breeding seasons should be used as set out in Furness 2015. For gannet this is March to September, for Sandwich tern this is April to August.	Table 12.7 within the Applicant's Environmental Statement (ES) presents a 'breeding' season of May to August for Sandwich tern. For gannet, only a 'migration-free breeding' season of April to August is presented.	Applicant confirms within their response to our Relevant Representations that the full breeding season was used for gannet within the ES and RIAA, and that the ORBA documents present an assessment for Sandwich tern using the full breeding season.	Yes, for ORBA docs only (in the case of Sandwich tern)	The Applicant has provided the corrected version of Table 4.21 of the Environmental Report (PD1-081) at Deadline 3 (see Appendix 1 to this document). This correction will be incorporated into PD1-081 when it is updated at Deadline 4. The Applicant confirms that the full breeding season for sandwich tern has been used in the assessments. As acknowledged by Natural England in Appendix F, the full breeding season has been used throughout the assessment for gannet, as reflected in PD1-081 and PD1-092.

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
Nocturnal Activity Factor (NAF)						
11	Incorrect NAFs used for little gull, Sandwich tern and common tern	Use NAFs set out in Garthe and Huppopp (2004) and Joint Statutory Nature Conservation Body (SNCB) guidance (JNCC et al 2024) for Collision Risk Modelling (CRM), or present empirical evidence to inform an alternative rate.	NAF of zero for little gull, sandwich tern and common tern	ORBA documents present updated CRM using the NAFs advised by NE for Sandwich tern but migratory CRM for common tern and little gull has not been rerun.	No, the ORBA documents use the correct NAF for Sandwich tern, but CRM has not been rerun for common tern and little gull as these were considered within the migratory CRM, which has not been rerun.	As the ORBA is smaller than the area for which impacts were assessed within the RIAA (AS1-095), Migratory CRM predictions for common tern and little gull will be lower than those presented within the RIAA (AS1-095), and therefore the Applicant's position is that conclusions will be the same as those presented within the RIAA (AS1-095). The Applicant can provide updated mCRM predictions as part of the update to the in-combination assessment at Deadline 4 if required.
Cumulative/in-combination						
12	Screening things out of the in-	Where there is a prospect of a contribution to an	Lesser black-backed gull at Alde-Ore Estuary SPA screened out. ST at	Applicant confirms within their response to our Relevant Representations that they do not consider	No	The Applicant has responded to this point in their comments on Submissions received at

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
	combination assessment due to the assessment 'alone' concluding a 'trivial and inconsequential level of effect', including Lesser black-backed gull at Alde-Ore Estuary SPA and Sandwich tern at North Norfolk Coast (NCC) SPA.	incombination adverse effects, small impacts need to be carried through to an incombination assessment.	NNC SPA screened in but assessment not presented.	it necessary to update the cumulative/incombination assessment and confirms that Sandwich tern has not been assessed for incombination impacts (see F41 in the Applicant's Response to Relevant Representations - Natural England [PD1- 071]).		Deadline 1 (REP 2-053, F1.17) submitted at Deadline 2. Given the levels of precaution in the assessment and the very small size of the project alone impact (i.e., the contribution of the Project is 0.031% of baseline mortality of Sandwich tern and 0.039% of baseline mortality of lesser black-backed gull), there are no circumstances where the project alone impact could materially contribute to the in-combination total for these species.
Presentation of displacement impacts						
13	Displacement matrices for mean	Natural England considers it best practice that matrices are also presented	Displacement matrices only presented for the mean abundance	The ORBA documents present displacement matrices for the mean and upper and lower confidence intervals of the	Yes, for ORBA documents only	The Applicant welcomes Natural England's recognition that this issue has been resolved for the ORBA documents. An

Ref	Issue	NE's Position	NE Explanation of Applicant's Position		Now Resolved?	Applicant Response
			DCO Submission	19. Sept Submission incl. Response to RR		
	abundance estimates only.	of the upper and lower confidence intervals for each species, so that the full range of impact scenarios can be understood.	estimate values for all species	abundance estimates for all species.		updated in-combination assessment will be submitted at Deadline 4.
14	Displacement matrices for Applicant's approach to apportioning of GU and RA to FFC SPA only.	Displacement matrices for guillemot and razorbill based on Natural England's preferred apportioning approach should be included in order to allow us to assess the predicted impacts using a range-based approach.	Displacement matrices only presented for the Applicant's approach to apportioning for GU and RA.	The ORBA documents present displacement matrices for GU according to NE's preferred approach to apportioning, however these are based on the model-based abundance estimates (see item 15). No displacement matrices have been presented for the design-based population estimates using NE's preferred approach to apportioning of GU to FFC SPA.	No	The Applicant considers that the model-based estimates are more robust and likely to be more accurate than any design-based estimates. Displacement matrices have been presented using the Applicant's preferred approach alongside those derived from Natural England's preferred approach (see ORBA Displacement Assessment PD1-088).

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
15	Displacement matrices for model-based estimates for GU and RA only.	Submitted at D1 (see F1.4 in Table 1 of Appendix F1 to NE's D1 submission [REP1- 061]). Natural England requests that the Applicant presents an assessment for guillemot using both design-based and model-based estimates and presents displacement matrices for both.	N/A	ORBA documents present displacement matrices for GU at FFC SPA using NE's preferred approach to apportioning (see item 14), however this is for model-based estimates only. Displacement matrices not presented for design-based estimates	No	The Applicant considers that the model-based estimates are more robust and likely to be more accurate than any design-based estimates. Therefore, the Applicant considers that the displacement assessment provided (see ORBA Displacement Assessment PD1-088), which uses the more accurate and robust model-based population estimates, uses the best available data (also see the Applicant's response to App F 2.3 provided at Deadline 2).
Highly Pathogenic Avian Influenza (HPAI)						
16	Limited consideration	There should be some consideration within the HRA	The Applicant discussed the recent outbreaks of HPAI within the	No further consideration of HPAI within the ORBA HRA. Applicant confirms in their response to our	No. Please see our response to Examiner's Questions	Please refer to the Applicant's response to this question in Applicant's Response to

Ref	Issue	NE's Position	NE Explanation of Applicant's Position DCO Submission	19. Sept Submission incl. Response to RR	Now Resolved?	Applicant Response
	of HPAI within the HRA	process as to the potential for long-term implications of HPAI to reduce the resiliency of populations. See F7 within Table 1 and Appendix 1 of our Relevant Representations [RR-045, in addition to our answer to Ex Q1 HRA 1.1.	Environmental Statement Offshore and Intertidal Ornithology Chapter (AS1- 041) under Section 12.4.4 Future Baseline, with a general statement that "the impact assessment will be carried out in a context of declining baseline population for a number of species". Nonetheless, the Applicant has not set out how this has been done for individual species and colonies within the RIAA.	Relevant Representation that they do not propose to update the RIAA to include this.	Appendix K Q1 HRA 1.1	NE Appendix K Q1 HRA 1.1 (Table 1.3).

Table 1.4: The Applicant’s Comments on REP2-092 MMO Comments on the Applicant’s Amended Application Documents

ID	Deadline 2 Submission	Applicant Response
1.1 General Comments		
1.1.1	The MMO mentioned in our Deadline 1 submission (REP1-056), that we acknowledged that the Applicant has produced a Policy Compliance Document (AS-012). Section 6, Table 1 includes an assessment of Marine Plan Policies and welcomed the signposting provided by the Applicant. The MMO is therefore satisfied that the Marine Policy considerations remain as part of this document, and there does not need to be an additional document created as this would be duplication. However, we did note that policies E-ECO-1 and E-TR-3 appear to be missing. These should be added to Table 1 to ensure all policies are considered.	The Applicant has responded to this comment at Deadline 2 (REP2-053) with a clarification and does not consider it necessary to update the Policy Compliance Document (AS-012).
1.2.1	The MMO acknowledges the Applicant’s response to RR-042.027 in relation to the submission of a Construction Programme to the MMO for approval prior to the commencement of licensed activities which is required under condition 13(1)(b) of Schedules 10 and 11	This comment is noted by the Applicant.
Environmental Statement General Comments		
1.3 Coastal Processes		
1.3.1	The MMO agrees that subsea cable burial is the preferred option for cable protection.	This comment is welcomed by the Applicant.
1.3.2	For scour protection, a variety of options are listed, such as, rock/gravel placement, concrete mattresses, flow energy	The Applicant will update document 8.21 Outline Scour and Cable Protection Management Plan (APP-295) to include

ID	Deadline 2 Submission	Applicant Response
	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.	prioritisation of ecological based solutions for scour protection, and subsequently the Schedule of Mitigation (REP2-039) to reflect this at Deadline 4.
1.4 Dredge, Disposal and Chemical Use		
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.
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.
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.
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	This comment is noted by the Applicant. The Applicant intends to update the Outline Scour Protection and Cable Protection Management Plan at Deadline 4.

ID	Deadline 2 Submission	Applicant Response
	currently reviewing the outline plan and will provide more comments at Deadline 4.	
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.
1.5 Benthic Ecology		
1.5.1	The MMO welcomes the Applicant’s commitment to pre-construction surveys to provide understanding on the distribution and presence of potential <i>Sabellaria spinulosa</i> 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.
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 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.

ID	Deadline 2 Submission	Applicant Response
1.5.3	<p>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 surrounding coarse/mixed sediments (see Jenkins et al 2015, 2018).</p>	<p>The Applicant welcomes the MMO’s agreement on the mitigation measures, Outline Cable Specification and Installation Plan, and Outline Biogenic Reef Mitigation Plan.</p> <p>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 <i>S. spinulosa</i> were previously recorded. The Applicant will update the Outline Offshore In-Principle Monitoring Plan (APP-276) at Deadline 4 to confirm this.</p>
1.5.4	<p>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.</p>	<p>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.</p>

ID	Deadline 2 Submission	Applicant Response
1.5.5	<p>RR-042.063 (PD1-071): The MMO acknowledges the difficulties highlighted by the Applicant in distinguishing <i>Sabellaria spinulosa</i> 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 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.</p>	<p>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 along a transect (i.e. the contiguous patches of reef) for review at Deadline 4.</p>
1.5.6	<p>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</p>	<p>The Applicant can confirm that <i>Sabellaria</i> 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</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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 m^2 implied if Sabellaria aggregations are observed at 1, 2, 3, etc consecutive points. If the distance between 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 $\geq 25 m^2$, then a single observation of a Sabellaria aggregation could indeed be indicative of potential 'Low' reef.</p>	<p>(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).</p> <p>Should single records of <i>Sabellaria</i> 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 <i>Sabellaria</i> reef extent ($\geq 25m^2$), if the transect was that length, and will certainly not meet the medium threshold for <i>Sabellaria</i> reef extent (min. transect distance of 112.8m to give est. circular area $\geq 10,000m^2$). It is believed that the consecutive approach analyses are still the more reliable way of analysing reef extent.</p> <p>All instances of single screenshots showing <i>Sabellaria</i> were classified as having low reef structure, which means that they cannot be classified as anything other than low overall <i>Sabellaria</i> reefiness, regardless of their calculated/estimated extent.</p>
1.5.7	<p>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</p>	<p>The Applicant can confirm that the images presented within the report are representative of the analyses.</p> <p>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.</p>

ID	Deadline 2 Submission	Applicant Response
	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.	
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.
1.5.9	In summary, previously raised issues concerning the spread of INNS and the approach to identifying Sabellaria reef using seafloor imagery remain unresolved. The MMO's position on these points remain unchanged.	This comment is noted by the Applicant.
1.6 Fish Ecology		
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	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.

ID	Deadline 2 Submission	Applicant Response
	<p>spawning season. We advise that no pilling is permitted during the Banks herring spawning season between 1 September and 16 October each year.</p>	
1.6.2	<p>RR-042.068 (PD1-071): The MMO maintains its position on the 135 decibels (dB) Single Strike Sound Exposure Level (SELs) 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.</p>	<p>As noted by the MMO comment 1.6.5 onwards, the Applicant has previously provided additional figures showing the modelled outputs for the 135dB SELs 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.</p> <p>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.</p> <p>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-</p>

ID	Deadline 2 Submission	Applicant Response
		<p>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 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).</p> <p>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.</p>
1.6.3	<p>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.</p>	<p>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).</p>
1.6.4	<p>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,</p>	<p>The Applicant maintains its position that the behavioural response of herring to a 135dB impulsive noise (from Hawkings <i>et al.</i>, 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</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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.</p>	<p>which an impulsive sound becomes non-impulsive, studies to date (Hastie <i>et al.</i>, 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 <i>et al.</i> (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.</p>
1.6.5	<p>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.</p>	<p>This comment is noted by the Applicant..</p>
1.6.6	<p>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.</p>	<p>This comment is noted by the Applicant.</p>
1.6.7	<p>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</p>	<p>This comment is noted by the Applicant.</p>

ID	Deadline 2 Submission	Applicant Response
	<p>(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 their winter hibernation period and spawning period.</p>	
1.6.8	<p>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.</p>	<p>This comment is noted by the Applicant.</p>
<p>1.6 Fish Ecology – The Main Outstanding Issue</p>		
1.6.9	<p>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</p>	<p>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 it’s advisors to discuss this matter and is</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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.</p>	<p>hoping to meet in early January 2025. Updates will be provided to the ExA at Deadline 4 of the outcomes of that meeting.</p>
<p>1.6 Fish Ecology – The ORBA and Revision to the Offshore ECC</p>		
<p>1.6.10</p>	<p>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 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</p>	<p>The Applicant welcomes the MMO’s agreement that the ORBA reduces the impact ranges for both foundation types.</p>

ID	Deadline 2 Submission	Applicant Response
	abundance over a cumulative 10-year period (2012/3 – 2023/4). Comments on each figure have been provided below.	
1.6.11	<p>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 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.</p>	This comment is noted by the Applicant.
1.6.12	<p>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</p>	This comment is noted by the Applicant.

ID	Deadline 2 Submission	Applicant Response
	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.	
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 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.	This comment is noted by the Applicant.
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.
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	This comment is noted by the Applicant.

ID	Deadline 2 Submission	Applicant Response
	<p>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 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.</p>	
1.6.16	<p>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.</p>	<p>This comment is noted by the Applicant.</p>
<p>1.6 Fish Ecology – Requests</p>		
1.6.17	<p>Figures 3.1 – 3.6 of PD1-082 (Figures 1 to 6, Annex 1 of this document) indicate that impacts of mortality and potential</p>	<p>The Applicant has acknowledged within the Fish and Shellfish impact assessment (APP-065) that there would be</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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:</p> <p><i>No piling of any type shall be permitted between 1 September and 16 October each year.</i></p> <p>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.</p> <p>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</p>	<p>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.</p>

ID	Deadline 2 Submission	Applicant Response
	<p>that piling within the eastern portion of the array can be carried out at any time.</p> <p>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.</p>	
1.6.18	<p>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:</p> <p><i>No piling of any type shall be permitted between 1 September and 16 October inclusive.</i></p>	<p>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 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.</p>
1.6.19	<p>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</p>	<p>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.</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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).</p> <p>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 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.</p>	
<p>1.7 Shellfish Ecology</p>		
<p>1.7.1</p>	<p>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</p>	<p>The Applicant welcomes the MMO’s agreement on the proposed mitigation measures.</p>

ID	Deadline 2 Submission	Applicant Response
	species. The MMO agrees with all mitigation measures proposed.	
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 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.	The Applicant welcomes the MMO's comment.
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.
1.7.4	The MMO acknowledges that the Applicant has provided sufficient information to address the previous comments and	The Applicant welcomes the MMO's comment.

ID	Deadline 2 Submission	Applicant Response
	evidenced the use of MMO landings data for commercially important shellfish species between 2018-2021.	
1.8 Underwater Noise		
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).
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.

ID	Deadline 2 Submission	Applicant Response
1.8.3	<p>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.</p>	<p>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.</p>
1.8.4	<p>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.</p>	<p>The Applicant will update the figures within the Underwater Noise Assessment (APP-161) to include a colour scale at Deadline 5.</p>
1.8.5	<p>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 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</p>	<p>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 Document 15.9A - Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix A Figures Part 1 of 2 (PD1-082),</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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.</p>	<p>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.</p>
1.8.6	<p>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 diameter) are derived from theoretical considerations verified against results of a state-of-the-art finite element model for pile driving noise radiation (rather than based on empirical observations).</p> <p>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</p>	<p>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-the-art 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.</p>

ID	Deadline 2 Submission	Applicant Response
	<p>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.</p>	
1.8.7	<p>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 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.</p>	<p>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 projects which have undertaken 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</p>

ID	Deadline 2 Submission	Applicant Response
		<p>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.</p>
1.8.8	<p>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.</p>	<p>The Applicant welcomes the MMO’s agreement on the updates to the Outline Marine Mammal Mitigation Protocol [REP2-035].</p>
1.8.9	<p>Since completing the original noise modelling for the Environmental Impact 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.</p>	<p>This comment is noted by the Applicant. The Offshore Restricted Build Area (ORBA) was 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.</p>
1.9.0	<p>Notwithstanding the new NE modelling location, all modelling undertaken has used the same model (INSPIRE v5.1), same</p>	<p>This comment is noted by the Applicant.</p>

ID	Deadline 2 Submission	Applicant Response
	parameters, same flee speeds, and the same impact criteria as the previous modelling report, with just the modelling location being altered.	

Table 1.5: The Applicant’s Comments on REP2-092 MMO Comments on Stakeholders Deadline 1 responses

ID	MMO Comment	Applicant Response
2.1 Maritime and Coastguard Agency (MCA) (REP1-044) – Schedule 10, Part 2: Generation Assets		
2.1.1	The MMO welcomes the addition of ‘regional fisheries contacts’ for notification within Schedule 10, part 2 7(11).	The Applicant has responded to the MCA’s comments on Schedule 10 of the DCO at section 10, under REP1-044 Maritime and Coastguard Agency of the Applicant’s Response to Written Representations (Document reference 20.3).
2.1.2	The MMO welcomes the addition of ‘regional fisheries contacts’ for informing within Schedule 10, part 2 7(12).	
2.1.3	The MMO welcomes the rewording of Schedule 10, part 2 9(1) to: <i>‘Except as otherwise required by Trinity House the undertaker must paint all structures forming part of the authorised project yellow (colour code RAL 1023) from at least Highest Astronomical Tide to a height as directed by Trinity House.’</i>	
2.1.4	4 Schedule 10, part 2 11(10): The MMO notes MCA requests this to be amended to: <i>‘All dropped objects must be reported to the MMO, UKHO and HMCG using the Dropped Object Procedure Form as soon as reasonably practicable and no later than 6 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.’</i> The MMO	

ID	MMO Comment	Applicant Response
	is in discussion with MCA regarding this change and will provide an update in the next deadline.	
2.1.5	The MMO welcomes the addition of ‘substation and meteorological mast’ within Schedule 10, part 2 13(1)(a)(ii).	
2.1.6	The MMO is still in discussion with the MCA in relation to the amendment of Schedule 10, part 2 17(2)(b) to: <i>‘A swath bathymetric survey to IHO Order 1a of the area within the Offshore Order Limits extending to an appropriate buffer around the site, must be undertaken. The survey shall include all proposed cable routes. This should fulfil the requirements of MGN654 and its supporting ‘Hydrographic Guidelines for Offshore Renewable Energy Developers’, which includes the requirement for the full density data and reports to be delivered to the MCA and the UKHO for the update of nautical charts and publications. This must be submitted as soon as possible, and no later than [three months] prior to construction. The Order Limit shapefiles must be submitted to MCA. The Report of Survey must also be sent to the MMO.’</i>	
2.1.7	The MMO is currently in discussion with the MCA on the amendment of Schedule 10, part 2 18(5) to: <i>‘Construction monitoring must include vessel traffic monitoring 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.’</i>	

ID	MMO Comment	Applicant Response
2.1.8	Schedule 10, part 2 19(2): The MMO notes MCA’s request this to be amended to: <i>‘Post construction monitoring must include vessel traffic monitoring by automatic identification system for a duration of three consecutive years following the completion of construction of authorised project, 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.’</i> The MMO is in discussion with MCA regarding this change and will provide an update in the next deadline.	
2.1.9	The MMO welcomes the addition of Schedule 10, part 2 23(1) after (b): <i>‘(c) as built plans; and (d) latitude and longitude coordinates of the centre point of the location for each wind turbine generator and offshore platform, substation, booster station and meteorological mast; provided as Geographical Information System data referenced to WGS84 datum.’</i>	
2.1 Maritime and Coastguard Agency (MCA) (REP1-044) – Schedule 11, Part 2: Transmission Assets		
2.1.10	The MMO welcomes the addition of ‘regional fisheries contacts’ for notification within Schedule 10, part 2 7(11).	The Applicant has responded to the MCA’s comments on Schedule 11 of the DCO at section 11, under REP1-044 Maritime and Coastguard Agency of the Applicant’s Response to Written Representations (Document reference 20.3).
2.1.11	The MMO welcomes the addition of ‘regional fisheries contacts’ for informing within Schedule 10, part 2 7(12).	
2.1.12	The MMO welcomes the rewording of Schedule 11, part 2 9(1) to: <i>‘Except as otherwise required by Trinity House the undertaker must paint all structures forming part of the authorised project yellow (colour code RAL 1023) from at least Highest Astronomical Tide to a height as directed by Trinity House.’</i>	

ID	MMO Comment	Applicant Response
2.1.13	<p>Schedule 11, part 2 11(10): The MMO notes MCA requests this to be amended to: <i>'All dropped objects must be reported to the MMO, UKHO and HMCG using the Dropped Object Procedure Form as soon as reasonably practicable and no later than 6 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.'</i> The MMO are in discussion with MCA regarding this change and will provide an update in the next deadline.</p>	
2.1.14	<p>The MMO welcomes the amendment of Schedule 11, part 2 17(2) to: <i>'A swath bathymetric survey to IHO Order 1a of the area within the Offshore Order Limits extending to an appropriate buffer around the site, must be undertaken. The survey shall include all proposed cable routes. This should fulfil the requirements of MGN654 and its supporting 'Hydrographic Guidelines for Offshore Renewable Energy Developers', which includes the requirement for the full density data and reports to be delivered to the MCA and the UKHO for the update of nautical charts and publications. This must be submitted as soon as possible, and no later than [three months] prior to construction. The Order Limit shapefiles must be submitted to MCA. The Report of Survey must also be sent to the MMO.'</i></p>	
2.1.15	<p>The MMO welcomes the amendment of Schedule 11, part 2 18(5) to: <i>'Construction monitoring must include vessel traffic monitoring by</i></p>	

ID	MMO Comment	Applicant Response
	<p><i>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.'</i></p>	
2.1.16	<p>The MMO welcomes the amendment of Schedule 11, part 2 19(2) to: <i>'The undertaker must conduct a swath bathymetric survey to IHO Order 1a of the installed export cable route and provide the data and survey report(s) to the MCA and UKHO. The MMO should be notified once this has been done, with a copy of the Report of Survey also sent to the MMO. This should fulfil the requirements of MGN654 and its supporting 'Hydrographic Guidelines for Offshore Renewable Energy Developers', which includes the requirement for the full density data and reports to be delivered to the MCA and the UKHO for the update of nautical charts and publications.'</i></p>	
2.1.17	<p>The MMO welcomes the addition of 'Completion of Construction' section which is the same as in Schedule 10, part 2 paragraph 23: <i>'The undertaker must submit a close out report to the MMO, MCA, UKHO and the relevant statutory nature conservation body 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—</i></p> <p><i>(a) as built plans; and</i></p> <p><i>(b) latitude and longitude coordinates of the inter array and export cable routes; provided as Geographical Information System data referenced to WGS84 datum.</i></p>	

2.1 Maritime and Coastguard Agency (MCA) (REP1-044) – Schedules 12 and 13 part 2: Northern ANS structure 1 & 2

ID	MMO Comment	Applicant Response
2.1.18	The MMO welcomes the addition of 'regional fisheries contacts' for notifications to 5(11) to both Schedules	The Applicant has responded to the MCA's comments on Schedules 12 and 13 of the DCO at section 12, under REP1-044 Maritime and Coastguard Agency of the Applicant's Response to Written Representations (Document reference 20.3).
2.1.19	The MMO welcomes the amendment of the following to 7(1) in both Schedules: <i>'Except as otherwise required by Trinity House the undertaker must paint all structures forming part of the authorised project yellow (colour code RAL 1023) from at least HAT to a height as directed by Trinity House.'</i>	
2.1.20	Schedule 12 and 13, part 2 8(10): The MMO notes MCA requests this to be amended to: <i>'All dropped objects must be reported to the MMO, UKHO and HMCG using the Dropped Object Procedure Form as soon as reasonably practicable and no later than 6 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.'</i> The MMO is in discussion with MCA regarding this change and will provide an update in the next deadline	
2.1 Maritime and Coastguard Agency (MCA) (REP1-044) – Schedule 14 and 15 part 2: Southern ANS structure 1 & 2		
2.1.21	The MMO welcomes the addition of 'regional fisheries contacts' for notifications to 5(11) to both Schedules.	The Applicant has responded to the MCA's comments on Schedules 14 and 15 of the DCO at section 13, under REP1-044 Maritime and Coastguard Agency of the Applicant's Response to Written Representations (Document reference 20.3)
2.1.22	The MMO welcomes the amendment of the following to 7(1) in both Schedules: <i>'Except as otherwise required by Trinity House the undertaker must paint all structures forming part of the authorised</i>	

ID	MMO Comment	Applicant Response
	<i>project yellow (colour code RAL 1023) from at least HAT to a height as directed by Trinity House.'</i>	
2.1.23	Schedule 14 and 15, part 2 8(10): The MMO notes MCA requests this to be amended to: <i>'All dropped objects must be reported to the MMO, UKHO and HMCG using the Dropped Object Procedure Form as soon as reasonably practicable and no later than 6 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.'</i> The MMO is in discussion with MCA regarding this change and will provide an update in the next deadline.	
2.1 Maritime and Coastguard Agency (MCA) (REP1-044) – Schedule 16 part 2: Biogenic Reef Creation		
2.1.24	Schedule 16, part 2 8(10): The MMO notes MCA requests this to be amended to: <i>'All dropped objects must be reported to the MMO, UKHO and HMCG using the Dropped Object Procedure Form as soon as reasonably practicable and no later than 6 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.'</i> The MMO	The Applicant has responded to the MCA's comments on Schedule 16 of the DCO at section 14, under REP1-044 Maritime and Coastguard Agency of the Applicant's Response to Written Representations (Document reference 20.3)

ID	MMO Comment	Applicant Response
	is in discussion with MCA regarding this change and will provide an update in the next deadline.	
2.1.25	<p>The MMO notes the contact details in Schedules 10,11,12,13,14,15 and 16 Part 1 to be amended to:</p> <p>Maritime and Coastguard Agency UK Technical Services Navigation Spring Place 105 Commercial Road Southampton SO15 1EG Email: navigationsafety@mcga.gov.uk</p>	The Applicant has updated Schedules 10 to 16 of the DCO accordingly.
2.2 Historic England (HE) (REP1-042)		
2.2.1	The MMO acknowledges that HE concurs with the proposals as relevant to identified embedded mitigation options and that unknown historic receptors will require adaptive mitigation measures (Section 1.7 – Mitigation measures of the Outline Marine Archaeological Written Schemes of Investigation (APP-282)).	This comment is noted by the Applicant.
2.2.2	The MMO notes that HE concurs that a Draft Marine Written Scheme of Investigations (WSI) is to be produced prior to any pre-commencement survey. The MMO notes that the outline WSI sets out everything at the time of application and how subsequent WSI is to be delivered as a condition of consent. A WSI must be produced for each phase: preconstruction, construction, operation and maintenance and decommissioning. The MMO notes that a WSI condition is included in	This comment is noted by the Applicant. The Marine Archaeological Written Schemes of Investigation condition has been added to Condition 11 (g) of Schedules 12, 13, 14 and 15 and Condition 8(d) of Schedule 16 of the draft Development Consent Order (version 6, submitted at Deadline 3).

ID	MMO Comment	Applicant Response
	the generation assets and transmission DMLs (Schedules 10 and 11) but there was no reference made to use of same WSI in Schedules 12,13,14,15 and 16 for compensatory methods.	
2.2.3	The MMO notes that HE is satisfied by the inclusion of conditions (Part 2) within (draft) DML Schedules 10 (Generation Assets) and 11 (Transmission Assets) for production, in consultation with Historic England, of a WSI for the offshore Order limits.	This comment is noted by the Applicant.
2.3 Lincolnshire County Council (REP1-053)		
2.3.1	The MMO acknowledges Lincolnshire County Council’s concerns regarding traffic, landscape and tourism, and we note that the council have stated that without the commitments to a steering group and Ecological Compliance Officer the Council would wish to raise an objection to the impacts on ecology and to the achievability of the Biodiversity Net Gains proposed. However, upon receipt of further information, the council considers that this objection could be removed.	The Applicant does not understand why the MMO is commenting on matters above Mean High Water Springs and therefore outside its remit.
2.4 East Lindsey District Council, Boston Borough Council and South Holland District Council (REP1-052)		
2.4.1	The MMO acknowledges that the councils consider that ‘subject to the requirements in the draft Development Consent Order, that in isolation, or taken cumulatively, the local impacts of this development would be acceptable, and that broadly the scheme would accord with local and national policies.’	The Applicant does not understand why the MMO is commenting on matters above Mean High Water Springs and therefore outside its remit.
2.5 Royal Society for the Protection of Birds (RSPB) (REP1-047)		
2.5.1	The MMO notes the RSPB’s agreement with the additional winter bird survey data as part of the Applicant’s response to Section 51 advice (AS1-108) and agrees that the assessment of significant effects in the	This comment is noted by the Applicant.

ID	MMO Comment	Applicant Response
	EIA and the conclusion on adverse effects on site integrity in the RIAA, in relation to onshore ornithology, have not changed.	
2.5.2	The MMO notes that RSPB has raised a request regarding a detailed timetable and scope of proposed updates to Examination on the various compensation measures.	This comment is noted by the Applicant. The Applicant has provided timelines for updates on proposed measures in response 5.24 in Table 1.7 of The Applicant's Comments on Written Representations (Document Reference 20.3).
2.5.3	The MMO acknowledges that in relation to the Kittiwake Artificial Nesting Structures (ANS) the RSPB requires further information on matters relating to the identification of risks associated with site selection, engineering, manufacturing, supply chain and logistics and impacts on lead-in times.	These comments are noted by the Applicant. The Applicant has provided details to the points raised by the RSPB in response 6.10 in Table 1.7 of The Applicant's Comments on Written Representations (Document Reference 20.3).
2.5.4	The MMO acknowledges that in relation to the Kittiwake Artificial Nesting Structures (ANS) the RSPB requires further information on the risks posed to implementation by the interaction of the post-consent Crown Estate strategic process with any post-consent Project-level process, especially in relation to selection of ANS locations outside the control of the Applicant.	
2.6 Environment Agency (EA) (REP1-055) – Chapter 3 Project Description Landfall Construction		
2.6.1	The MMO acknowledges the EA's satisfaction on the Maximum Design Parameters for the cable depth at the landfall location following discussions and is now satisfied that there will be sufficient clearance for a safe working distance (in line with Environment Agency guidance and procedures) and that the EA will undertake the relevant consultation with the Applicant, if and when the EA propose to undertake defence works.	This comment is noted by the Applicant. The Applicant has provided details in response 20 – 22 in Table 1.18 of 15.3 The Applicant's Responses to Relevant Representations (PD1-071)
2.6 Environment Agency (EA) (REP1-055) – Chapter 7 Marine Physical Processes - Morphology		

ID	MMO Comment	Applicant Response
2.6.2	<p>The MMO notes the EA has raised that the continuation of a beach nourishment scheme is not guaranteed. The EA’s concern raised in paragraph 8.4 of their representation (RR-018) was in relation to the positioning of cable joint bays/infrastructure should beach nourishment cease and the coast were to respond with a period of rapid erosion (catch-up) to get to a point where it would have been if beach nourishment had not been initiated. The EA stated that in these situations, erosion can continue rapidly, and the coast can "overtake" said position.</p>	<p>This comment is noted by the Applicant. The Environment Agency clarified within their Written Representation (paragraphs 4.2 – 4.4 of REP1-048) that the concern was primarily associated with “positioning of cable joint bays/infrastructure should beach nourishment cease”. The Environment Agency further confirmed within paragraph 4.4 of REP1-048 that the commitments made by the Applicant to depth of infrastructure were encouraging. As such, the points raised by the Environment Agency on this matter are considered to relate on onshore aspects of the Project rather than matters directly associated with the Marine Physical Processes chapter.</p>
<p>2.6 Environment Agency (EA) (REP1-055) – HDD Pit Bunding</p>		
2.6.3	<p>The MMO acknowledges EA’s acknowledgement of the Applicant’s preparation of the indicative design arrangements for the landfall drill site, including arrangements for flood protection around the HDD drill pits, in response to EA’s request for additional information. The MMO will keep a watching brief and review when published.</p>	<p>This comment is noted by the Applicant.</p>
<p>2.7 Natural England (NE) (REP1-057)</p>		
2.7.1	<p>The MMO notes NE’s strong recommendation that for key chapters, such as Offshore Ornithology and Marine Processes of the ES, should be updated to reflect the ‘post-OBRA’ development and clean and tracked changes versions should be submitted into the Examination once the impact assessment has been progressed significantly. The MMO also notes that NE requests that the Applicant’s cumulative and</p>	<p>As stated in Q1 HRA 1.3 of The Applicant’s Responses to The ExA’s First Written Questions (ExQ1) (REP2-051) the Applicant intends to update the in-combination assessments that were presented at application to include the more up to date values from other projects which become available at Deadline 4, when updated project positions for key projects (such as Rampion 2 and Dogger Bank South) will be available. The Applicant will also update</p>

ID	MMO Comment	Applicant Response
	<p>in-combination assessments should also be updated to reflect the post-ORBA development.</p>	<p>the Report to Inform Appropriate Assessment (AS1-095)to incorporate the ORBA at Deadline 4.</p> <p>As stated in Issue Specific Hearing 2, the Applicant will update the Environmental Statement chapters to incorporate the ORBA, updates to the cumulative assessment within the Environmental Statement chapters, and other relevant updates, at Deadline 5.</p>
2.7.2	<p>The MMO notes that NE has raised that for the ORBA to be relied upon as mitigation in the impact assessment (including the appropriate assessment) it would need to be secured through a robust DCO/DML condition. NE intend to advise on the proposed DCO/DML wording at Deadline 2 subject to clarification from the ExA regarding the status of the ORBA within the Examination.</p>	<p>The Examining Authority issued a procedural decision on the 3 December 2024 accepting the Offshore Restricted Build Area (OBRA) change request. The ORBA has been secured by requirement 4(2) of the draft. Development Consent Order (Version 6, submitted Deadline 3).</p>
2.7.3	<p>The MMO notes that NE hopes to provide a position statement on Noise Abatement Systems. The MMO will keep a watching brief and provide comments when NE publishes their position on this matter.</p>	<p>The Applicant acknowledges that Natural England may provide a position statement on Noise Abatement Systems (NAS) however, the Applicant’s current position remains unchanged in that until the Defra policy is published, it is not possible 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.</p> <p>NAS have been considered as a mitigation option within the 8.6.1 Outline Marine Mammal Mitigation Plan (MMMP) for Piling Activities (version 3 submitted as part of the Deadline 2 submission) and In-Principle Site Integrity Plan (SIP) (PD1-</p>

ID	MMO Comment	Applicant Response
		048). The Applicant is aware of the developments in the management of underwater noise within UK waters, particularly in relation to impacts in marine mammals and are engaging with Department for Environment, Food and Rural Affairs (Defra) on the strategic measures. However, due to the current uncertainties around what the final Government policy position will be, and in the absence of any significant effects from the Project, the Applicant does not consider it necessary to make a commitment to the use of NAS at this stage of the development.
2.7 Natural England (NE) (REP1-057) - Appendix B1 Natural England’s comments on Marine Processes including the Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor Appendix B Blockage Modelling Results (REP1-058)		
2.7.4	Natural England has acknowledged that the Applicant has confirmed that trenchless techniques only will be employed at landfall and that this is secured in the DML in Part 1 of Schedule 1.	This comment is noted by the Applicant.
2.7.5	The MMO acknowledges that Natural England has raised concerns regarding impacts associated with the introduction of the ORBA, namely the Realistic Worst-Case Scenario (RWCS) as presented in PD1-084, magnitude of change, and evidence gaps, potential changes to sediment transport processes and seabed morphology over the lifetime of the Project.	The Applicant has provided a response to Natural England's Deadline 1 Appendix B1 (REP1-058) in The Applicant's Comments on Deadline 1 Submissions (REP2-053) (Table 2 B1.1- 1.5).
2.7.6	The MMO notes that Natural England have stated that further modelling may also be required pre-construction.	This comment is noted by the Applicant. The Applicant has provided a response to Natural England's Deadline 1 Appendix B1 (REP1-058) in The Applicant's Comments on Deadline 1 Submissions (REP2-053) (Table 2 B1.2). The Applicant does not consider further modelling to be necessary.

ID	MMO Comment	Applicant Response
2.7 Natural England (NE) (REP1-057) - Appendix C1 Natural England's comments on Benthic Ecology Documents (REP1-059)		
2.7.7	<p>The MMO notes that Natural England's position remains unchanged from their relevant representation (RR-045) regarding Annex I reef and the placement of cable protection, and that even if micrositing of the cable takes place to avoid known Annex I reef features, there will still be a loss of supporting habitat for Annex I <i>Sabellaria spinulosa</i> reef. Natural England considers that this will lead to an adverse effect to the Inner Dowsing Race Bank and North Ridge (IDRBNR) Special Area of Conservation (SAC) and would require compensation, and therefore Natural England does not agree with the conclusions of the Report to Inform Appropriate Assessment (AS1-095).</p>	<p>The Applicant notes this position and is awaiting supplementary information from Natural England relating to supporting habitat for Annex I <i>Sabellaria spinulosa</i> reef. The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 3).</p>
2.7.8	<p>Natural England has requested that disposal sites within the IDRBNR SAC should be upstream of Annex I sandbank features and be deposited using a fall pipe to help facilitate recovery and minimise wider environmental impacts, and that this is included within the Disposal Site Characterisation Report.</p>	<p>The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (, Table 3).</p>
2.7.9	<p>The MMO acknowledges that Natural England advised that the commitment to install removable cable protection is extended to the whole of IDRBNR SAC.</p>	<p>The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 3).</p>
2.7.10	<p>The MMO notes that Natural England have acknowledged that within the Outline Benthic Mitigation Plan [PD1-067] and the Schedule of mitigation [PD1-059] to avoid cable installation within the Marine Management Organisation (MMO) fisheries byelaw area. Natural England has highlighted that the Applicant has stated that ancillary works may be undertaken within the byelaw area. Natural England advises that mitigation should commit to no works including ancillary works within the byelaw area.</p>	<p>The Applicant can confirm that no works including ancillary works will take place within the MMO fisheries byelaw area, this has been added to the Schedule of Mitigation (PD1-059) and secured within the revised Outline Biogenic Reef Mitigation Plan (REP2-043). The Applicant has provided a response to Natural England's advice in The Applicants Comments on Deadline 1 Submissions (REP2-053).</p>

ID	MMO Comment	Applicant Response
2.7.11	The MMO acknowledges that Natural England has requested that mitigation for Annex I reef and/or supporting sediments should be incorporated within the appropriate plans and documents so that this is secured. The MMO welcomes this comment.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 3).
2.7 Natural England (NE) (REP1-057) - Appendix E1 Natural England’s comments and updated advice on Marine Mammals (REP1-060)		
2.7.12	The MMO agrees with NE’s advice regarding Noise Abatement Systems (NAS) or noise reduction at source.	The Applicant notes the MMOs agreement with Natural England. The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4).
2.7.13	The MMO notes that NE’s reiterates their advice in their Relevant Representation (RR-045) regarding disturbance impacts to harbour seals from piling and that additional mitigation measures such as NAS should be implemented.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, Section 3).
2.7.14	The MMO acknowledges NE’s advice in RR-045 regarding avoiding disturbance during sensitive times such as pupping season (June, July and August).	The Applicant has provided a response to Natural England’s advice in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, Section 4).
2.7.15	The MMO notes that NE has requested a figure containing the noise contours to understand the overlap with the WNNC SAC, and we note that NE has raised a concern regarding barrier impacts from the piling at the Offshore Reactive Compensation Platform (ORCP).	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, Section 4). The Applicant has provided a revised Figure at Deadline 3 in Document reference: 20.16)
2.7.16	The MMO acknowledges NE’s welcoming of the submission of the Interim Population Consequences of Disturbance Modelling (iPCoD).	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, Section 5).
2.7.17	The MMO notes that NE advise that pre-piling searches by qualified Marine Mammal Observers (MMObs) are adopted as this is the minimum requirement set out in the Joint Nature Conservation	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, E1.1). The Applicant submitted an

ID	MMO Comment	Applicant Response
	Committee (JNCC) guidelines for minimising the risk of injury to marine mammals from piling noise.	update to the Outline MMMP for Piling Activities at Deadline 2 (REP2-035).
2.7.18	The MMO notes that NE does not recommend piling commences during poor visibility conditions.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4 E1.2).
2.7.19	The MMO notes that NE acknowledges Passive Acoustic Monitoring (PAM) as an effective method to supplement visual observations to detect vocalising animals underwater	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4 E1.2).
2.7.20	The MMO notes NE’s advice from RR-045 that soft-start should commence at no higher than 10% of the maximum hammer energy, therefore reducing the proposed soft-start of 15% maximum hammer energy (990 kJ) to 10% of maximum hammer energy (660 kJ).	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4 E1.3).
2.7.21	The MMO notes NE’s view on the potential requirement of using more MMObs and implementing stricter limits on workable weather conditions. The MMO also notes NE stating that if effective monitoring cannot cover the PTS zone, other methods of mitigation or sound reduction will be required.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4 E2.1). The Applicant submitted an update to the Outline MMMP for Unexploded Ordnance Clearance at Deadline 2 (REP2-037).
2.7.22	The MMO notes that NE advises that a pre-detonation search by qualified MMObs is adopted since this is the minimum requirement from the Joint Nature Conservation Committee (JNCC) guidelines.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4 E2.2). The Applicant submitted an update to the Outline MMMP for Unexploded Ordnance Clearance at Deadline 2 (REP2-037).
2.7.23	The MMO notes that NE recommends that the delay in operations needs to reflect the distance a marine mammal would need to travel to flee the PTS onset range. We also note that NE raise the consideration for how the remainder of the PTS onset range will be mitigated.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, E2.3).

ID	MMO Comment	Applicant Response
2.7.24	The MMO notes that NE advises that the commencement of UXO detonations should not occur during periods of reduced visibility.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4, E2.4).
2.7.25	The MMO notes that NE recommends that visual marine mammal watches, conducted by MMObs 30 minutes before Acoustic Deterrent Device (ADD) application are implemented and that this may require the watch to be longer than one hour.	The Applicant has provided a response to Natural England in The Applicants Comments on Deadline 1 Submissions (REP2-053) (Table 4 E2.5). The Applicant submitted an update to the Outline MMMP for Unexploded Ordnance Clearance at Deadline 2 (REP2-037).

Table 1.6: The Applicant’s Comments on REP2-092 MMO’s General Comments

ID	MMO Comment	Applicant Response
3.1 Consideration of the under 12 metre fishing fleet		
3.1.1	The MMO would like to highlight to the ExA and the Applicant that the MMO has published a report called ‘Spatial distribution of under 12m fishing activity and sensitivity to offshore wind development in the east marine plan areas (MMO1382).’ The report outlines the findings of the evidence project with the aim to increase the spatial resolution and understanding of the under 12m fishing fleet’s activity in the east marine plan areas and their sensitivity to Offshore Wind Farms. Please see Annex 4 for the full report.	The Applicant has undertaken a review of the report. The Applicant notes the Spatial distribution of under 12m fishing activity and sensitivity to offshore wind development in the east marine plan areas (MMO1382) report (the MMO report) (MMO, 2024) provides useful insight into fishing activity by the under 12m fleet in the East Marine Plan areas, notably in its presentation of regional fishing activity maps. The maps are based on interviews with a proportion of fishers in this fleet and for the East Yorkshire and the north Lincolnshire coasts (area most relevant to the Project) it is noted that the regional fishing activity maps are the result of interview with the operators of 12 vessels; 11 potting vessels and 1 demersal trawler. Mapped indicative crab and lobster potting grounds for the under 12m fleet overlap with the offshore ECC, and indicative whelk grounds overlap with the Array Area. Demersal trawl indicative
3.1.2	The MMO believes the Applicant should review the report and discuss how the Project can use the findings to supplement the best available evidence being put forward in this Examination.	

ID	MMO Comment	Applicant Response
		<p>grounds are mapped and overlap with the Array Area, though it should be noted that this reflects feedback from a single vessel operator. The activity mapping presented in the MMO Report (MMO, 2024) is consistent with the understanding of the commercial fisheries baseline described in the Chapter 14 Appendix 1 Commercial Fisheries Technical Baseline (APP-170) and Chapter 14 Commercial Fisheries (APP-069), and is broadly aligned with both landings data and spatial data (i.e. VMS data, AIS data, outputs of the Eastern IFCA inshore mapping project).</p> <p>The Applicant concludes the MMO Report (MMO, 2024) mapping does not alter any assumptions regarding the commercial fisheries baseline. It is not clear, but the sensitivity analysis presented in the MMO Report (MMO, 2024) does not appear to take into account any industry-standard offshore wind farm mitigation, nor the mitigation measures committed to by the Applicant, and thus is not expected to align directly with the outcomes of the commercial fisheries assessment in the ES chapter (APP-069). It is not considered by the Applicant that the MMO Report (MMO, 2024) results in any change to the commercial fisheries baseline or assessment outcomes.</p>
3.2 Artificial Nesting Structures		
3.2.1	<p>The MMO previously informed the ExA (PD1-115) of how the Project may apply for a separate marine licence for the construction of the Artificial Nesting Structures (ANSs) to meet the necessary timescales for the construction of that structure prior to turning of the first turbine.</p>	<p>This comment is noted by the Applicant.</p>

ID	MMO Comment	Applicant Response
3.2.2	<p>The ANSs are detailed within the Project’s Kittiwake Compensation Plan as an Adverse Effect on Integrity (AEoI) could not be ruled out for kittiwake (<i>Rissa tridactyla</i>) features of the Flamborough and Filey Coast (FFC) Special Protection Area (SPA). The Application for the DCO includes Schedule 12 (northern ANS 1), Schedule 13 (northern ANS 2), Schedule 14 (southern ANS 1) and Schedule 15 (southern ANS 2) as DMLs.</p>	<p>This comment is noted by the Applicant.</p>
3.2.3	<p>The positives of the inclusion of a DML as opposed to a separate marine licence is that it would greatly decrease the complexity of having separate consenting processes and would keep the Planning Inspectorate as the lead authority for all aspects of the project, thereby simplifying the decision-making process. In making the decision to consent, the SoS is effectively saying they are content that the compensation set out adequately meets the required needs, as informed by SNCBs and the ExA.</p>	<p>This comment is noted by the Applicant.</p>
3.2.4	<p>The MMO also considers that the risk of legal challenge decreases by following a single consenting pathway. The MMO works with all DCO Applicants in a pre-application capacity to review environmental information, review drafts of the DML, and advise as to matters within our remit. By feeding into the DCO process this way the MMO considers the Planning Act 2008 ‘one stop shop approach’ is being utilised to its greatest advantage.</p>	<p>The Applicant does not consider there to be an inherent risk of legal challenge arising as a result of following a consenting approach of seeking: marine licences by separate applications under the Marine and Coastal Access Act 2009; deemed marine licences as part of the dDCO; or both.</p>
3.2.5	<p>Additionally, there is no certainty of obtaining any marine licenses as these are assessed on a case-by-case basis. Having separate processes (i.e. a DCO and a marine licence) could increase the risk and could impact upon the viability of the Project if one consent is granted and the other is not. Therefore, the MMO strongly advises that having one consent would significantly reduce such complexity and risk to the project.</p>	<p>The Applicant notes that there is no certainty of obtaining a deemed marine licence or a marine licence through a separate consenting process with all applications assessed on a case by case basis. The Applicant notes that separate marine licences have been obtained for ANSs in relation to some other projects, for example Hornsea Four.</p>

ID	MMO Comment	Applicant Response
3.2.6	The MMO does not support the submission of a separate marine licence application for ANSs at this stage, prior to the SoS’ decision on the Project. However, if a separate marine licence application were to be submitted, all references to the ANSs must be removed from the DCO (works no 9 within the definition of the authorised development) and the related DMLs (Schedules 12, 13, 14 and 15) before the MMO can make a positive determination. If the references to the ANS are not removed from the DCO the MMO cannot determine a marine licence application for activities covered within the DCO/DML owing to the risk of duplicated licensable activities.	The Applicant does not agree that multiple marine licences cannot be granted for the same area/same activities provided that their implementation is appropriately controlled.
3.2.7	In summary, the MMO recommends the DMLs for ANS are kept within the DCO for the SoS to consider as part of the wider Project’s consent. If a marine licence application were to be submitted, the MMO requires the draft DCO to be amended by removing all references to ANS prior to determination on any such marine licence application.	This comment is noted by the Applicant. The Applicant will seek to discuss this matter further with the MMO.

Table 1.7: The Applicant’s Comments on REP2-090 Fosdyke Playing Fields Deadline 2 Submissions

Ref No	Deadline 2 Submission	Applicant Response
RR-022	The Playing Field is happy that Puttock Gate will remain open during construction. but are concerned about drainage of the football pitch due to disruption in adjoining field	<p>The Applicant welcomes the Playing Field’s position regarding Puttock Gate.</p> <p>Regarding drainage, and as set out in the Code of Construction Practice,(document reference 8.1, version [HOLD]) , the Applicant has appointed a local agricultural drainage consultant who is currently obtaining drainage records from landowners and designing the pre-construction drainage that will be put in place. The</p>

Ref No	Deadline 2 Submission	Applicant Response
		<p>Applicant has also submitted an outline Surface Water Management Plan (APP-273) which addresses how run-off will be managed. A final Surface Water Management Plan will be updated and submitted for approval</p> <p>The installation of preconstruction drainage will avoid disruption to drainage systems.</p>

Table 1.8: The Applicant’s Comments on REP2-089 Anthony Kindred Deadline 2 Submissions

Ref No	Deadline 2 Submission	Applicant Response
RR-084	Whilst the addition of passing places is a positive step I think that as Wash Road at Present is a national speed limit of 60mph it should be reduced to 30mph during the construction phase	The Applicant has included in its draft DCO (REP2-009), provision for a temporary 30mph speed limit either side of the construction entrance. This extends past the Almshouses and the extent can be seen in the Traffic Regulation Order Plan (PD1-023).
	I understand full access will be maintained at the Almshouses.	The Applicant agrees that full access will be maintained to the Almshouses.
	The Almshouses are very fragile especially the roofs so will need constant monitoring during construction and a plan will be needed if any damage needs attention.	The Applicant notes this comment and reiterates the previous response provided in the Applicant’s Responses to Relevant Representations (PD1-072 questions RR.084.003 and RR.004.041) which states that levels from construction operations which the project is committed to are below the level where damage could occur to buildings. During detailed design the vibration predictions from the construction operations would be refined and monitoring would be undertaken at any sensitive receptors where there may be a risk of complaints, and the procedure included in the final Noise and Vibration Management Plan.

Ref No	Deadline 2 Submission	Applicant Response
	The fields in Fosdyke surrounding the construction corridor are usually flooded during the winter and compaction by construction works would cause run off onto roads and homes unless drainage is put into place.	
RR-085.006	Fields and ditches that are not the responsibility of either LCC or ID board are flooded during the winter months, compaction of fields during construction will create runoff, action should be taken to ensure no flooding occurs.	The Applicant has appointed a local drainage consultant who is currently obtaining drainage records from landowners and designing the pre-construction drainage that will be put in place. The Applicant has also submitted an outline Surface Water Management Plan (APP-273) which addresses how run-off will be managed. A final Surface Water Management Plan will be updated and submitted for approval.

References

Furness, Robert. (2015). Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS).. Natural England Commissioned Report. 164.

Appendix A : Updates requested in RR-045 for Deadline Three

1.1 Introduction

1. The Applicant has been requested by Natural England to update information that has been found to contain errors or where a fuller dataset would be useful to present. This document provides that updated information with explanatory text detailing:
 2. The changes that have been made;
 - The location (within the application documentation) and context of the information; and
 - Where the request for the update was made.

1.2 Updates

1.2.1 Update to Table 12 of document AS1-099

3. **Error! Reference source not found.** of Annex A of document AS1-099 (Apportioning Appendix to the Report to Inform Appropriate Assessment (AS1-095) presents details regarding kittiwake apportioning to offshore colonies, methods and results. This table supports the data presented in table 6.2 of PD1-092 (Offshore and intertidal Ornithology Apportioning Appendix to the Habitats Regulations Assessment for the Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor), showing the data used in calculating the apportioning of birds to the Flamborough and Filey Coast SPA (FFC SPA), incorporating offshore breeders. The rows highlighted in blue were used to define the proportion contributing to the FFC SPA, with a summed proportional weight of 0.613. This results in 61.3% apportioning to the FFC SPA. This update was requested by Natural England in RR-045 (ID F2.10).
4. The offshore population that fed into the apportioning calculation was 1,672 birds. This number was derived from counts of 862 Apparently Occupied Nests (AONs) multiplied by two to give an offshore population in individuals. The Applicant considers that this provides a very precautionary number to use as the offshore population as it does not consider any counts of individuals made, or the prospect that any trace nests were either occupied or the birds associated with them were still in the area. This addresses the question posed in F2.10 of 'Appendix F'.

Table 9 Detailed kittiwake apportioning results

Site	Distance from ODOW (km)	Count	Percentage 1/Psea	Distance ²	Resulting Weight for SPA	Proportional Weight of SPA	Source of	
Flamborough (incl. harbour but not buildings)	8112.7	202	55.4	0.018	12,701	0.003	0.001	SMP (2016)

Offshore platforms	20.0	1,672	57.9	0.017	400	0.791	0.341	AS1-064 (Annex D) (2024)
Bridlington Town	112.8	310	55.2	0.018	12,724	0.005	0.002	SMP (2021)
Flamborough Head and Bempton Cliffs	114.8	79,306	51.8	0.019	13,179	1.274	0.549	SMP (2022)
Filey 3	125.7	4,114	56.1	0.018	15,800	0.051	0.022	SMP (2017)
Filey 1	125.8	1,580	55.6	0.018	15,826	0.020	0.008	SMP (2017)
Lowestoft	126.5	892	68.6	0.015	16,002	0.009	0.004	SMP (2018)
Filey 2	126.7	6,368	55.8	0.018	16,053	0.078	0.034	SMP (2017)
Cayton Bay 2	131.6	0	54.5	0.018	17,319	0.000	0.000	SMP (2015)
Cayton Bay 1	131.8	0	54.4	0.018	17,371	0.000	0.000	SMP (2015)
Sandside	135.9	0	54.5	0.018	18,469	0.000	0.000	SMP (2023)
Harbourside Houses	136.0	74	54.5	0.018	18,496	0.001	0.000	SMP (2023)
Castle Headland	136.1	3,266	54.6	0.018	18,523	0.035	0.015	SMP (2023)
Nelson Pub and Foreshore	136.1	26	54.4	0.018	18,523	0.000	0.000	SMP (2023)
Sea Cadets	136.1	0	54.5	0.018	18,523	0.000	0.000	SMP (2023)
Spa Bridge	136.1	378	54.2	0.018	18,523	0.004	0.002	SMP (2023)
Grand Hotel	136.2	586	54.2	0.018	18,550	0.006	0.003	SMP (2023)
Sulman's (urban)	136.2	38	54.3	0.018	18,550	0.000	0.000	SMP (2011)
Huntress Row	136.3	292	54.2	0.018	18,578	0.003	0.001	SMP (2023)
Old Britannia Inn/Eastborough	136.3	52	54.4	0.018	18,578	0.001	0.000	SMP (2023)
Royal Hotel	136.3	68	54.2	0.018	18,578	0.001	0.000	SMP (2023)

Town Hall	136.3	46	54.2	0.018	18,578	0.001	0.000	SMP (2023)
Long Nab	140.5	90	54.8	0.018	19,740	0.001	0.000	SMP (2015)
Hundale	143.4	0	54.7	0.018	20,564	0.000	0.000	SMP (2018)
Cloughton Wyke	143.8	0	54.5	0.018	20,678	0.000	0.000	SMP (2021)
Robin Hoods Bay - Ness Point	153.3	0	54.4	0.018	23,501	0.000	0.000	SMP (2019)
Minsmere RSPB (Scrape & Beach)	155.1	0	42.2	0.024	24,056	0.000	0.000	SMP (2021)
Hawsker Bottoms 1	156.7	212	54.3	0.018	24,555	0.002	0.001	SMP (2002)
Hawsker Bottoms 2	157.8	410	54.2	0.018	24,901	0.003	0.001	SMP (2023)
Sizewell Rigs 1	158.2	1,004	61.5	0.016	25,027	0.007	0.003	SMP (2008)
Saltwick Nab 2	159.1	356	54.1	0.018	25,313	0.003	0.001	SMP (2023)
Saltwick Nab 1	160.6	80	53.7	0.019	25,792	0.001	0.000	SMP (1999)
Coquet Island RSPB	268.8	1,038	47.0	0.021	72,253	0.003	0.001	SMP (2022)
Farne Islands	296.9	7,166	48.1	0.021	88,150	0.019	0.008	SMP (2023)
Total	4,856.5	109,626.0	1,851.0	0.628	754,375	2.321	1.000	-

1.2.2 Update to Table 4.21 of document PD1-081

5. As requested by Natural England in RR-045 (ID F2.11), Table 10 below replaces Table 4.21 in document PD1-081 and updates the bio-seasons used in the assessment for Sandwich tern, specifically the full breeding season. The season has been adjusted from May–August to April–August.

Table 10: Comparison of mean impact values for collision mortality for Sandwich tern presented for ES and ORBA

Season	Regional Population (Furness, 2015)	Regional Mortality	Baseline Mortality	Estimated Mortality – Option 2 (individuals)	Collision Increase in Mortality – Option 2	Baseline Mortality – Option 2
Original impacts – mean impact values						
Full breeding (Apr – Aug)	29,427	7,062.7	0.4		0.005	

Autum (Jul – Sep)	38,051	9,132.2	0.0	0.000
Spring (Mar – May)	38,051	9,132.2	0.0	0.000
Annual (BFMPS)	38,051	9,132.2	0.4	0.004
Annual (biogeographic)	148,000	35,520.0	0.4	0.001
ORBA impacts - mean impact values				
Full breeding (Apr – Aug)	31,629	7,736.5	0.4	0.005
Autum (Jul – Sep)	38,050	9,307.0	0.0	0.000
Spring (Mar – May)	38,050	9,307.0	0.0	0.000
Annual (BFMPS)	38,050	9,307.0	0.0	0.004
Annual (biogeographic)	148,000	36,200.8	0.4	0.001
Difference				
Full breeding (Apr – Aug)		0.0		0.000
Autum (Jul – Sep)		0.0		0.000
Spring (Mar – May)		0.0		0.000
Annual (BFMPS)		0.0		0.000
Annual (biogeographic)		0.0		0.000

Appendix A. Figure supporting MMO 1.5.4 response

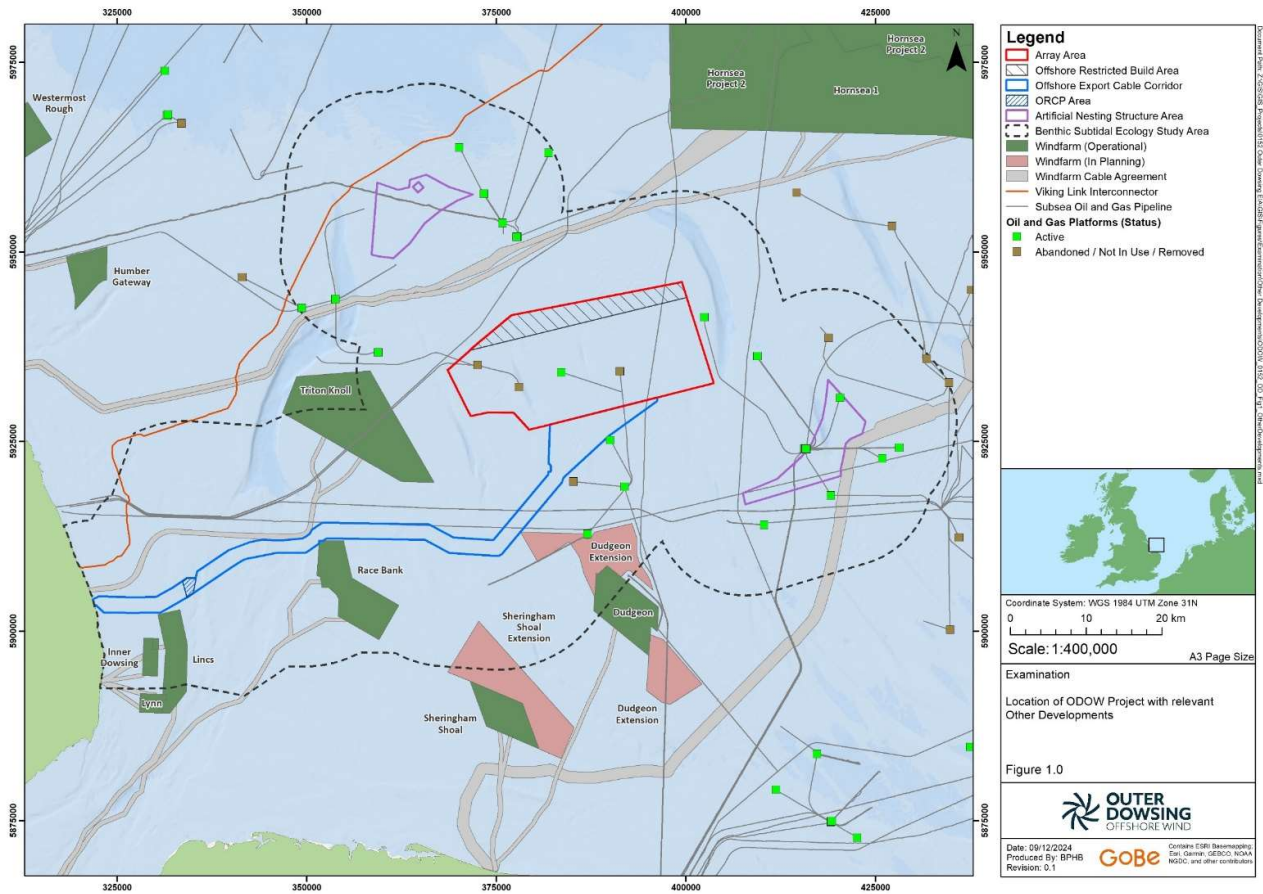


Figure 1 Location of ODOV Project with relevant other developments