DBS Offshore Wind

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

The Applicants' Responses to Deadline 5 Documents

Document Date:	June 2025
Document Reference:	16.4
Revision Number:	01
Classification:	Unrestricted

RWE MASDAR

Company:	**RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited**	Asset:	**Development**
Project:	**Dogger Bank South Offshore Wind Farms**	Sub Project/Package	**Consents**
Document Title or Description:	The Applicants' Responses to Deadline 5 Documents		
Document Number:	005874276-01	Contractor Reference Number:	PC2340-RHD-ZZ-ZZ-RP-Z-0217

Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	June 2025	Submission for Deadline 6	RHDHV	RWE	RWE

Contents

Tables

Glossary

Term	Definition
Array Areas	The DBS East and DBS West offshore Array Areas, where the wind turbines, offshore platforms and array cables would be located. The Array Areas do not include the Offshore Export Cable Corridor or the Inter-Platform Cable Corridor within which no wind turbines are proposed. Each area is referred to separately as an Array Area.
Baseline	The existing conditions as represented by the latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of the Projects.
Collision	The act or process of colliding (crashing) between two moving objects.
Commitments Register	An Excel spreadsheet which identifies all of the Projects' commitments and mitigation relating to each technical topic under consideration in the EIA process and where each commitment is secured in the DCO.
Cumulative Effects	The combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor / resource.
Cumulative impact	The combined impact of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor / resource.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
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 value, or sensitivity, of the receptor or resource 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 Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.

Term	Definition
Erosion	Wearing away of the land or seabed by natural forces (e.g. wind, waves, currents, chemical weathering).
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Fish and Shellfish Ecology Study Area	The Fish and Shellfish Ecology Study Area for the Projects is defined as ICES Rectangles 36E9; 36F0; 37E9; 37F0; 37F1; 37F2; 38F0; 38F1; and 38F2. It covers a total of 26,858km2, and includes the Offshore Development Area with a minimum buffer distance of 7km.
Habitats Regulations	Conservation of Habitats and Species Regulations 2017 and Conservation of Offshore Marine Habitats and Species Regulations 2017.
Habitats Regulations Assessment (HRA)	The process that determines whether or not a plan or project may have an adverse effect on the integrity of a European Site or European Offshore Marine Site.
Haul Road	The track along the Onshore Export Cable Corridor used by traffic to access different sections of the onshore export cable route for construction.
Impact	Used to describe a change resulting from an activity via the Projects, i.e. increased suspended sediments /increased noise.
In Isolation Scenario	A potential construction scenario for one Project which includes either the DBS East or DBS West array, associated offshore and onshore cabling and only the eastern Onshore Converter Station within the Onshore Substation Zone and only the northern route of the onward cable route to the proposed Birkhill Wood National Grid Substation.
Mean High Water Springs (MHWS)	MHWS is the average of the heights of two successive high waters during a 24 hour period.
Nearshore	The zone which extends from the swash zone to the position marking the start of the offshore zone (~20m).
Nationally Significant Infrastructure Project (NSIP)	Large scale development including power generating stations which requires development consent under the Planning Act 2008. An offshore wind farm project with a capacity of more than 100 MW constitutes an NSIP.
Offshore Development Area	The Offshore Development Area for ES encompasses both the DBS East and West Array Areas, the Inter-Platform Cable Corridor, the Offshore Export Cable Corridor, plus the associated Construction Buffer Zones.

Term	Definition
Offshore Export Cable Corridor	This is the area which will contain the offshore export cables between the Offshore Converter Platforms and Transition Joint Bays at the landfall.
Offshore Export Cables	The cables which would bring electricity from the offshore platforms to the Transition Joint Bays (TJBs).
Onshore Converter Stations	A compound containing electrical equipment required to transform HVDC and stabilise electricity generated by the Projects so that it can be connected to the electricity transmission network as HVAC. There will be one Onshore Converter Station for each Project.
Onshore Export Cable Corridor	This is the area which includes cable trenches, haul roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the Onshore Converter Stations, Transition Joint Bays or temporary access routes; but includes Temporary Construction Compounds (purely for the cable route).
Onshore Substation Zone	Parcel of land within the Onshore Development Area where the Onshore Converter Station infrastructure (including the haul roads, Temporary Construction Compounds and associated cable routeing) would be located.
Onward Cable Connection	Area of 400kV HVAC onshore export cable from the Onshore Converter Stations to the Proposed Birkhill Wood National Grid Substation.
Preliminary Environmental Information Report (PEIR)	Defined in the EIA Regulations as information referred to in part 1, Schedule 4 (information for inclusion in environmental statements) which has been compiled by the applicants and is reasonably required to assess the environmental effects of the development.
Project Change Request 1	The changes to the DCO application for the Projects set out in **Project Change Request 1 - Offshore & Intertidal Works** [AS-141] which was accepted into Examination on 21st January 2025.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of Receptors include species (or groups) of animals, plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
Sand wave	Bedforms with wavelengths of 10 to 100m, with amplitudes of 1 to 10m.
Scour protection	Protective materials to avoid sediment erosion from the base of the wind turbine foundations and offshore substation platform foundations due to water flow.
Sediment	Particulate matter derived from rock, minerals or bioclastic matter.

Term	Definition
Sediment transport	The movement of a mass of sediment by the forces of currents and waves.
Special Area of Conservation (SAC)	Strictly protected sites designated pursuant to Article 3 of the Habitats Directive (via the Habitats Regulations) for habitats listed on Annex I and species listed on Annex II of the Directive
Special Protection Area (SPA)	Strictly protected sites designated pursuant to Article 4 of the Birds Directive (via the Habitats Regulations) for species listed on Annex I of the Directive and for regularly occurring migratory species.
Statutory Nature Conservation Bodies (SNCBs)	Comprised of JNCC, Natural Resources Wales, Department of Agriculture, Environment and Rural Affairs/Northern Ireland Environment Agency, Natural England and Scottish Natural Heritage, these agencies provide advice in relation to nature conservation to government.
Suspended sediment	The sediment moving in suspension in a fluid kept up by the upward components of the turbulent currents or by the colloidal suspension.
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).

Acronyms

Term	Definition
ADD	Acoustic Deterrent Devices
AEoI	Adverse Effects on Integrity
ANS	Artificial Nesting Structures
AoS	Area of Search
BGS	British Geological Survey
BNNC	Berwickshire North Northumberland Coast
CBRA	Cable Burial Risk Assessment
CGR	Counterfactual of Population Growth Rate
CI	Confidence Limit
CNS	Central North Sea
CO	Conservation Objective
CoCP	Code of Construction Practice
CPS	Counterfactual of Population Size
CRN	Company Reference Number
DAS	Design and Access Statement
dB	Decibel
DBS	Dogger Bank South
DBSEL	Dogger Bank South (East) Limited
DBSWL	Dogger Bank South (West) Limited
DCO	Development Consent Order
Defra	Department for Environment Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero

Term	Definition
DML	Deemed Marine Licence
DoL	Depth of Lowering
EA	Environment Agency
ECC	Export Cable Corridor
ECR	Export Cable Route
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
ERYC	East Riding of Yorkshire Council
ES	Environmental Statement
ESP	Electrical Switching Platform
ETG	Expert Topic Group
ExA	Examining Authority
ExQ2	Examining Authority's Second Written Questions
FCI	Feature of Conservation Importance
FFC	Flamborough and Filey Coast
GRCIMP	Guillemot [and Razorbill] Compensation Implementation and Monitoring Plan
GRCP	Guillemot [and Razorbill] Compensation Plan
HAR	Habitat Assessment and Restoration Ltd
HAT	Highest Astronomical Tide
HDD	Horizontal Directional Drilling
HoT	Heads of terms
HPAI	Highly Pathogenic Avian Influenza

Term	Definition
HRA	Habitats Regulations Assessment
IHLS	International Herring Larvae Survey
IPMP	In Principle Monitoring Plan
ISH	Issue Specific Hearing
JNCC	Joint Nature Conservation Committee
KCIMP	Kittiwake Compensation Implementation and Monitoring Plan
KCP	Kittiwake Compensation Plan
KCSG	Kittiwake Compensation Steering Group
KPs	Kilometre Points
KSCP	Kittiwake Strategic Compensation Plan
LIR	Local Impact Report
LLFA	Lead Local Flood Authority
LSE	Likely Significant Effect
LVIA	Landscape and Visual Impact Assessment
MA	Monitoring Area
MCA	Maritime and Coastguard Agency
MCAA	Marine and Coastal Access Act
MCZ	Marine Conservation Zone
MCZA	Marine Conservation Zone Assessment
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMMP	Marine Mammal Mitigation Protocol

Term	Definition
MMO	Marine Management Organisation
MPA	Marine Protected Area
MRF	Marine Recovery Fund
MW	Mega Watt
NAS	Noise Abatement System
NDA	Non-Disclosure Agreement
NE	Natural England
NGET	National Grid Electricity Transmission plc
NSIP	Nationally Significant Infrastructure Project
NSSS	North Sea Sandeel Survey
OCoCP	Outline Code of Construction Practice
ODOW	Outer Dowsing Offshore Windfarm
OLMP	Outline Landscape Management Plan
OOOMP	Offshore Operations and Maintenance Plan
OSMP	Outline Soil Management Plan
OWF	Offshore Wind Farm
OWIC	Offshore Wind Industry Council
PEIR	Preliminary Environmental Information Report
PP	Protective Provisions
PSA	Particle Size Analysis
PTS	Permanent Threshold Shift
PVA	Population Viability Analysis
RIAA	Report to Inform Appropriate Assessment

Term	Definition
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SACO	Supplementary Advice on the Conservation Objectives
SEL_{SS}	Sound Exposure Level
SEP & DEP	Sheringham and Dudgeon Extension Projects
SIP	Site Integrity Plan
SNCBs	Statutory Nature Conservation Bodies
SNS	Southern North Sea
SoS	Secretary of State
SPA	Special Protection Area
SSC	Suspended Sediment Concentration
SSSI	Site of Special Scientific Interest
SST	Sea Surface Temperature
TTS	Temporary Threshold Shift
UCL	Upper Confidence Limit
UKHO	United Kingdom Hydrographic Office
UWN	Underwater Noise
UXO	Unexploded Ordnance
VMS	Vessel Monitoring System
WCS	Worst Case Scenario
ZoI	Zone of Influence

1 Introduction

1. This document presents the Applicants' responses to Deadline 5 documents received from Interested Parties (IPs) following submissions to the Examining Authority at Deadline 5 of the Dogger Bank South Examination.

2. For ease of referencing and to facilitate future cross-referencing, the Applicants have used the existing Planning Inspectorate reference (e.g. REP5-001) and created a unique identifier for each response by itemising the document into paragraphs or sections (e.g. REP5-001:1.1). The ID numbers can be found in the first column of each table.

2 Responses to Deadline 5 Documents

3. The Applicants' responses to documents received from IPs at Deadline 5 are provided in this section.

4. The Applicants have no comment on the responses from Dr Stephen Mounce [REP5-072], National Gas Transmission [REP5-063] or The National Trust [REP5-067].

5. The Applicants note that the responses from Creyke Beck Solar [REP5-069] and Padero Solar [REP5-076] are identical; comment is made on both together.

2.1 Creyke Beck Solar Limited and Padero Solaer Limited

Table 2-1 – The Applicants' response to Creyke Beck Solar Limited & Padero Solaer Deadline 5 Document [REP5-069 & REP5-076]

I.D.	Creyke Beck Solar Limited & Padero Solaer Response	Applicants' Response
REP5-069:1	**Dogger Bank South Offshore Wind Farms DCO Application (the Application)** Creyke Beck Solar Limited (company number 13342791) (CB Solar) is wholly owned by Padero Solaer Limited (company number 08021337) (PS Renewables). PS Renewables recently purchased CB Solar on 18th September 2024, after the Application was submitted. Accordingly, both companies are not yet registered as an Interested Party for the Application. PS Renewables and CB Solar requests that the Examining Authority accepts this request to register both companies as an Interested Party for the remainder of the examination. Since PS Renewables was established in 2012, it has rapidly become one of the UK's largest renewable energy development and construction companies, having built over 300 megawatts of solar farms during the subsidy period of 2012 to 2016. Since the withdrawal of these subsidy schemes in 2017, PS Renewables has focused on developing larger utility scale (and subsidy free) energy projects – mainly solar farms, co-located with battery storage. As such, PS Renewables is one of the largest developers of Nationally Significant Infrastructure Projects and other renewable development projects, with over 7 gigawatts of projects in development today.	The Applicants acknowledge that Creyke Beck Solar Limited is wholly owned by Padero Solaer Limited and will respond to both as a single entity (Creyke Beck Solar).
REP5-069:2	**Interest in the Application** PS Renewables and CB Solar support the principle of the Application to generate renewable energy as part of the transition to net-zero. However, it has fundamental concerns about the Application where it interfaces with CB Solar and PS Renewables' interests in the land at The Risby Estate and Plattwood Farm, Beverley (the Site). The Site has the benefit of planning permission to develop a 49.9MW solar PV generating station Ref: 21/02335/STPLF. The planning permission has been implemented and the solar farm development is already under construction. In particular, the location of the Application could have a significant detrimental impact on the Creyke Beck Solar Farm and its objective to maximise the generating capacity to supply the national grid electricity transmission network with renewable energy, via an iDNO connection. The objective of the Creyke Beck Solar Farm is a national government priority that is strongly supported across legislation and policy, which is reflected in the Planning Statement (Ref: APP-226), and so it is imperative that the applicant engages with CB Solar and PS Renewables to minimise the impact of the Application.	Following the sale of Creyke Beck Solar in September 2024, an introductory meeting was held with Creyke Beck Solar on the 3rd October 2024 to discuss respective project interactions. Further details on the Examination programme and timescales were issued by the Applicants on the 9th October 2024 along with a request for the completion of a Land Interest Questionnaire to enable updates to the Book of Reference. Since then, the Applicants have not received any further communication from Creyke Beck Solar until the submissions at Deadline 5. The Applicants consider that respective projects and land interests can co-exist without detriment to either party and without reducing the developable area of the Creyke Beck Solar Farm. The Applicants held a meeting with Creyke Beck Solar on 9th June 2025 to discuss the interactions and merits of a co-operation agreement to document the interfaces and how the projects can co-exist through regular design and interface meetings.
REP5-069:3	**Interface with the Application** The interface between the Application and the Site is shown on the Land Plans by reference to the following plots in the Book of Reference (Ref: REP4/010), where CB Solar has a category 2 interest in respect of an option to lease agreement dated 11 August 2021: 1. Plot 18-054 – construction vehicle access from public highway; 2. Plot 18-055 – haul road; and	The Applicants have been engaged with Albanwise Synergy Ltd (previous owners of the Creyke Beck Solar project and land it is subject to) throughout the pre-application stages and Examination in relation to interfaces identified between the Projects and Creyke Beck Solar Farm. Albanwise Synergy Ltd have not at any time raised concerns about the viability of the proposed development and they have been happy to sign Heads of terms (HoT) for an Option to Easement for the Onshore Cable Corridor with no reference to the Solar project. The Applicants acknowledge that their proposals may have an interaction with the Creyke Beck Solar project in respect of Plots 18-054, 18-055 and 19-007. Subject to further detailed design and discussion on respective construction programmes,

I.D.	Creyke Beck Solar Limited & Padero Solaer Response	Applicants' Response
	3. Plot 19-007 – onshore cable corridor to National Grid connection. PS Renewables is also listed in the Book of Reference (Ref: REP4/010) as a category 2 interest in respect of a right to construct over Plot 18-052, which is part of the area for the onshore cable corridor to the National Grid connection. This interest was included in the update of the Book of Reference submitted as part of the November 2024 additional submission (Ref: AS-043) PS Renewables recognises the importance of the Application as part of delivering net zero, but reducing the developable area of one renewable energy project for another is counterproductive to this objective. This should be properly considered in the context of alternatives locations available. In particular, the southern cable route (shown in Volume 7, Figure 5-3 application ref: 7.5.1) interfaces with the solar farm development and may reduce the developable area for renewable energy generation, depending on the nature and extent of any restrictions in place. If agreement can't be reached between the parties to minimise the impact on the Site, this should be given due weight in the planning balance. The Planning Statement (Ref: APP-226) does not currently refer to the impact on the planning permission at the Site and the weight that should be attributed to it. PS Renewables and CB Solar note that the applicant has assessed the 'In Isolation Scenario', whereby just the northern cable route would be needed if only one of the project arrays was built out, thereby avoiding the need for the southern route and its potentially negative impacts on the Creyke Beck Solar Farm. The Applicant has assessed the use of both trenching and trenchless construction methods for the onshore cable that interfaces with the Site, as shown at Obstacle ID OOX-7A. As the Creyke Beck Solar Farm is already being developed, it is requested that the applicant commits to using trenchless methods at sufficient depth for the whole section of cable route that passes through the Site. It is also requested that the applicant agrees that no restrictions will be imposed above the route for maintenance of the cable, that would otherwise prevent the operation of solar panels and associated infrastructure on that land.	the Applicants commit to collaborate with Creyke Beck Solar in respect of these interfaces between projects to ensure that there is no detriment to either project. The Applicants acknowledge that in the 'In Isolation Scenario', just the northern cable route would be needed if only one of the project arrays was built out, thereby avoiding the need for the southern route and impacts on the Creyke Beck Solar Farm. However, it is envisaged that both projects are constructed as set out in **Chapter 5 Project Description (Revision 3)** [REP1-009] and due to the proximity of the INEOS Ethylene Pipeline, the Applicants have no choice but to split the cable corridors. The **Works Plan (Onshore) (Revision 4)** [REP2-005], sets out where this infrastructure will be located. The Projects Onshore Export Cable Corridor, Onshore Substation Zone and Onward Cable Connection to the proposed Birkhill Wood substation have been carefully developed considering design constraints such as engineering, ecological and heritage, as well as proximity to residential property and designated landscapes, as set out in **Chapter 4 Site Selection and Assessment of Alternatives (Revision 2)** [AS-017]. The Applicants have undertaken a thorough Environmental Impact Assessment (EIA) and provided several outline management plans which include measures to manage construction impacts, these are set out in the **Outline Code of Construction Practice (OCoCP) (Revision 4)** [REP4-040] which is secured by Requirement 19 of **the Draft Development Consent Order (DCO) (Revision 8)** [document reference 3.1]. **Appendix A** of the **OCoCP (Revision 4)** [REP4-040] includes an **Outline Soil Management Plan (OSMP) (Revision 2)**, which includes detailed measures for soil management and reinstatement.
REP5-069:4	**Key asks of the Applicant** PS Renewables requests that the applicant: 1. Enters into a legally binding agreement that provides a framework for ongoing engagement in relation to the design of the Application and to provide the necessary protection for the Creyke Beck Solar Farm when works are carried out in close proximity. 2. Enters into discussions on the nature and extent of any proposed restrictions on development at the Site whilst the applicant is constructing and operating its project, taking into account the need to minimise the impact on the generating capacity and the consequential commercial implications, including significant loss of earnings from the Site. 3. Commits to the use of trenchless construction methods for installing the cable route across the Site and confirms that there will be no restrictions over the cable route that would otherwise negatively impact the generating capacity of the Creyke Beck Solar Farm.	The Applicants confirm that they will continue to engage with Creyke Beck Solar to discuss the points raised and a form of agreement to provide an ongoing framework for engagement between parties. The Applicants have shared indicative designs and offered Creyke Beck Solar HoT for a side agreement, which seeks protections for both parties and commitments to regular design and interface meetings, which would ultimately form a reciprocal Crossing and Proximity Agreement once detailed design was known of both projects. Subject to further detailed design and discussion on respective construction programmes, the Applicants commit to collaborate with Creyke Beck Solar in respect of these interfaces between projects to ensure that there is no detriment to either project The parties have agreed to meet again in July 2025 once respective designs have been considered and interactions further understood.

I.D.	Creyke Beck Solar Limited & Padero Solaer Response	Applicants' Response
	PS Renewables and CB Solar look forward to further discussing how best to minimise the interface between the Application and Creyke Beck Solar Farm to ensure that both projects can be successfully delivered as part of the net zero transition.	

2.2 East Riding of Yorkshire Council (ERYC)

Table 2-2 – The Applicants' comments on ERYC's Oral Summary of Responses to ISH4 [REP5-043]

I.D.	Question	ERYC Response	Applicants' Response
REP5-043:1	N/A	Graham Varley introduced himself and the team representing ERYC as: Graham Varley (GV) – Planning Russell Gladstone (RG) – Flood risk and drainage Bill Blackledge (BB) / Amanda McDermott (AM) – Landscape and visual amenity Jonathan Smith (JS) – Noise (and Jonathan Tait also available for any air quality or contamination questions) Richard Broadhead (RB) – Historic Environment Jennifer Woollin (JW) – Ecology GV explained that ERYC did not have anybody within the council with the technical expertise for the topic of geology, land use and agriculture.	No response is required.
Agenda Item 4 Hydrology and Flood Risk			
REP5-043:2	In response to a question to the applicant about the Environment Agencies (EA) updated National Flood Risk assessment in 2024 and subsequently updated flood risk mapping and the flood map for planning earlier this year ERYC were asked if they had anything further to add.	Confirmed nothing further to add (RG).	No response is required.
REP5-043:3	The Environment Agency (EA) responded to a question about the status of the 2013 River Hull and Holderness Drain flood mapping study in the context of the newly released National Flood Risk Information. ERYC were asked for any comments in response.	Confirmed that there was nothing further to add (RG).	No response is required.
REP5-043:4	The EA were asked a question and provided a response related to displacement of flood water from the temporary construction compound during the construction period. ERYC were asked if they had anything further to add.	Confirmed that there was nothing further to add (RG)	No response is required.
REP5-043:5	ERYC were asked if it would be useful for the applicants to commit to an expected minimum design standard for culvert size in respect of watercourses passing below the converter station and access road, and what that would be.	It is understood discussions had taken place with the applicants drainage engineers about what was needed and that details would be agreed beforehand. However, it was difficult to comment without the details and advised that the council could come back on the point (RG)	The Applicants met with the ERYC drainage engineer on the 15th May 2025 and no further comments were raised, the **Outline Code of Construction Practice (OCoCP) (Revision 4)** [REP4-040] states in section 5.15 that a Crossing Method Statement is agreed with the ERYC as the Lead Local Flood Authority (LLFA) to agree the size of the culvert which must be designed so as to not to reduce the flow rate of the existing drain.

I.D.	Question	ERYC Response	Applicants' Response
REP5-043:6	ERYC were asked if there was a minimum design standard that the LLFA would normally expect on similar culverts or situations.	Stated that they shouldn't reduce the capacity within the watercourse and it should allow the usual flows through. If that is done it should be okay but we would need to see that evidence during the design process (RG)	See response to REP5-043:5.
REP5-043:7	ERYC were asked if they had any concerns with the information currently submitted.	Advised no concerns currently (RG)	No response is required.
REP5-043:8	ERYC were asked if they considered temporary watercourse crossing methods explained by the applicant assessed the effects appropriately.	It is difficult to say until we have further information to show where the methods have been used previously and whether there was an impact or not (RG).	The Applicants submitted an updated **Chapter 20 Flood Risk and Hydrology (Revision 4)** [REP5-017] at Deadline 5 which incorporated an updated methodology to identify how the 23 Haul Road temporary crossings have been assessed. Further detail was provided in **The Applicants Responses to April 2025 Hearing Action Points** [REP4-096] in response to Action Point 10. The Applicants consider that this is sufficient information to allow ERYC to consider if the assessment of temporary watercourse crossings methodology is sufficient.
REP5-043:9	ERYC were asked what the lowest surface water discharge rates would be before blockages might occur leading to the risk of flooding off site.	The lowest rate we usually accept is 3.5 litres per second (RG)	Please see **The Applicants' Comments on the Responses to ExAQ2** [document reference 16.3] EP5-044: HF.2.4. The ERYC have now confirmed they are in agreement that '*1l/s is acceptable and will not increase flood risk*'.
REP5-043:10	ERYC were asked, from their experience, whether there are ways in which risk of blockage could be mitigated or managed.	There were none could be thought of at the current time (RG)	No response is required.
REP5-043:11	ERYC were asked if they could explain how the llfa usually respond to applications for consent to increase the rate of a discharge above the greenfield rate and any associated risk of flooding.	ERYC would usually ask to see evidence of how it may affect any neighbouring properties and land, and any increase in flood risk around the area. To ensure that if there is an increase in discharge rate that it's not going to increase the risk of flooding to a nearby property or land (RG).	See response to REP5-043:9.
Agenda Item 3 Landscape character and visual amenity			
REP5-043:12	The ExA asked the applicants whether they felt viewpoint 1 represents an accurate visualisation of the likely effects from the most effected receptors, notably the residential and recreational uses of Butt Farm. Following the applicants comments ERYC views were requested.	Accept the applicants comments about normal practice being to select publicly accessible viewpoints and that this is the closest public viewpoint to Butt Farm. With regard to leaf cover this had also been raised in a recent meeting and it was noted that the plantation tapers towards the left of this view, which is the east of the view, and is considerably thicker towards the right, which is the west. Therefore in the area of the converter station we would have the greatest depth of mitigation planting. On that basis we accept that, even in a winter view, there would be quite effective mitigation planting for this view, which would thin out towards the left of the view. On that basis we would be content with the position that the applicant is taking on this view (BB)	The Applicants welcome ERYC's agreement on this point. Separately, a photomontage from the campsite to the south of Butt Farm has been prepared and submitted as an appendix to **Chapter 29 Tourism and Recreation (Revision 2)** [document reference 7.29].

I.D.	Question	ERYC Response	Applicants' Response
REP5-043:13	The ExA asked the applicants why viewpoint 6 was not taken from further along the Beverley 20 public right of way where it turns the corner. ERYC were also asked for their views.	It is acknowledged there could be a more direct view of the converter stations by moving the viewpoint further to the north-east. It was also acknowledged that the viewpoint was selected when the converter station was proposed to be twice the size. It is felt appropriate that the viewpoint is reconsidered to better represent the development as it now stands (BB).	Please refer to **The Applicants' Response to ExQ2** [REP5-036], question LVI.2.4, and also **The Applicants' Comments on the Responses to ExQ2** [document reference 16.3] relating to the same question.
REP5-043:14	The ExA asked the applicants if more landscape mitigation could be provided around the northwest of the converter station site. ERYC were asked to comment on the applicants response.	ERYC had a very similar discussion with the applicants to explore opportunities at this point where there is a gap in the mitigation of the converter station as a whole. It was recognised that this is frustrated by the swathe that's required for the inbound cables which is quite wide. We did discuss whether it was possible as the design progresses for the cable route to be under the access road. This may have technical constraints, but it would allow, for example, tree planting along the western hedged boundary of the access road. It was also queried whether the wooded mitigation strip immediately north of the converter station could come closer to the access road. Its not known at this point if those options are possible but they would be encouraged. It was also queried if there was the potential for the existing woodland immediately west of the converter station to be extended north but it is understood that there's a strong desire by the landowner to have as much of the construction compound areas return to agriculture as possible and there is an obligation in terms of land use to try to do that. It is recognised there are conflicts on the land which limit the opportunity for landscape mitigation and expect the best that can be done is to push for inbound cable routes to be directly under the access road (BB).	The Applicants agree with this analysis and have previously updated the **Outline Landscape Management Plan (OLMP) (Revision 4)** [REP4-044] to include a commitment to review the mitigation planting in this area. Paragraph 28 of the OLMP recognises the technical and landowner constraints on planting in this area but sets out measures that could be adopted to increase screening to the north-west of the Onshore Substation Zone.
REP5-043:15	The ExA asked ERYC for its view on cumulative landscape effects and the outline landscape management plan.	The mitigation proposals have occupied as much of the site area as they can and therefore done what they can in terms of mitigating cumulative impacts. We have asked the applicant to consider ways of working with other agencies such as Humber Forest to enhance the local landscape. That is not just to mitigate the converter station itself, but also in part, because we have a cluster of large scale projects and assets south of Beverley and north west of Cottingham. We will be looking to find opportunities to enhance the landscape, which is really part of a broader approach as yet not as defined as we would like, both from the council's point of view and the applicant's point of view, to reduce cumulative impacts (BB)	The Applicants will be happy to work with ERYC and/or the Humber Forest in the post-consent period. As noted in the **OLMP (Revision 4)** [REP4-044] the Applicants "*will seek opportunities to partner with relevant organisations, such as the Humber Forest, in delivering offsite landscaping*."

I.D.	Question	ERYC Response	Applicants' Response
REP5-043:16	The ExA asked ERYC if that was sufficiently captured in the supporting documents	It was felt this was a question for the applicants but they have committed to working with other agencies such as Humber Forest and as such we are satisfied there is a commitment.	No response is required.
REP5-043:17	Views were sought on the matter of ash die back rates	We would appreciate details on the composition of the woodlands identified to give us a better understanding of how ash dieback would impact them over time. No details are held within the council for rates on ash dieback. However it was stated in our written response that the decline can be within 12 months from healthy canopy to quite a sparse canopy. On that basis if we could get that information on composition, that would give us a better idea of what the long term impact would be from ash dieback. (JW) BB advised that is currently easy to identify ash as it is one of the last trees to come into leaf. On that basis offered the use of a drone which could fly over the woodlands if publicly accessible.	The Applicants note that ERYC have supplied information on composition of woodlands in their **Response to Issue Specific Hearing 4 action points and Rule 17 letter** [REP4-118], Action no.22. The Applicants therefore assume no further information is required on this matter.
REP5-043:18	The ExA sought the applicants views on whether a zoning plan identifying maximum heights for different areas or groups of equipment within the converter station zone could be established to help inform what planting there needs to be. ERYC were asked for their views.	Many aspects of design will remain unresolved at this stage of a project of this scale but we will continue a dialogue with the applicant. The suggestion of a zoning plan might be helpful if the applicants felt they could commit to that, such as a plan to provide a little more detail on height implications of the equipment. (BB)	The Applicants have responded to the matter of a 'zoning plan' in **The Applicants' Responses to April 2025 Hearing Action Points** [REP4-096], setting out why such a plan is not feasible or necessary. **The Applicants' Responses to ExQ2** [REP5-036], question LVI.2.8, provides further detail.
REP5-043:19	ERYC were asked if 28 days as stated in the Design and Access Statement would be sufficient to comment on Design Panel review output.	ERYC are of the opinion that 28 days would not give us sufficient time to be able to carry out the consultations required and to assess those and respond within 28 days. We feel that 56 days is necessary to be able to do that. (GV) Additional comments made on the DAS – - The DAS states that ERYC and ward councillors are consulted on Design Panel outputs. Given comments made by Historic England we feel they should also be included as a consultee; - If HE are a consultee to be consulted through ERYC then 28 days would not provide sufficient response time; - The DAS does not include referral toa Design Council review. This can be accepted so long as there is a clear commitment to ensure the Design Panel is independent and it covers sufficient design expertise; - Currently the DAS states a design champion will be included on the panel to be made up of engineers with expertise from similar	Please see The Applicants Responses to the **Examining Authority's Second Written Questions (ExQ2)** [REP5-036] to G.D 2.2 and GD.2.3. A response has been provided to each of the points and agreed with the ERYC at a meeting on the 15th May 2025.

I.D.	Question	ERYC Response	Applicants' Response
		schemes. This is considered too narrow and should include, as an example, an architect and an ERYC representative; - The DAS also states the Terms of Reference will be prepared by the panel. We believe the ERYC should be involved in the preparation. (GV)	
Agenda Item 5 Noise and Vibration			
REP5-043:20	Paragraph 34 of the outline code of construction practice states that no activity where significant noise is audible beyond the onshore development area will take place outside of specified hours apart from under specified circumstances. ERYC have raised concerns with this with particular regard to the use of the wording audible and significant noise. ERYC were asked to explain their concerns.	This has been discussed recently with the applicants but feel that the words audible and significant are not particularly useful in this kind of scenario. They're not enforceable as such. A new form of words has been suggested to state that no plant or equipment shall be operated between the hours of 7 a.m. to 7 p.m., Monday to Saturday. And no plant and equipment operating on Sundays or bank holidays unless approved in writing with the local authority. It is understood the applicants are in agreement with that. It is considered this is a better form of wording and a lot better way of potentially controlling and minimizing loss of residential amenity from the construction works. It also gives the flexibility that other work activities may still take place outside those hours if required, emergency wise or whatever, that won't have an impact on residential amenity at all (JS)	The Applicants have reached agreement with ERYC on this matter. As described in **The Applicants Comments on Responses to ExQ1** [REP4-087] the Applicants updated paragraph 34 in section 5.2 of the **OCoCP (Revision 4)** [REP4-040] at Deadline 4 to state: *"No plant or machinery in the construction of the Projects shall be used outside the agreed core hours 7am – 7pm Monday to Saturday and at no time on Sundays or Bank Holidays unless agreed in writing with the Local Authority, likely under the following circumstances:…"* This wording was agreed with ERYC during correspondence on 3rd April 2025 and subsequently confirmed to be acceptable at ISH4.
REP5-043:21	The ExA asked if ERYC "audible" should be explained as part of the oCoCP or considered that the wording suggested would be sufficient.	It is considered the amended wording would be sufficient because the problem with audible is that who are you saying is it audible to? Would it be to officers of the local authority, to the people that live there, or to a representative of the construction company? And similarly with the term significant how do you determine significance? There are various British standards available which quantify impacts on residential amenity and it felt that the applicants have adequately used these standards and explanations in their noise assessment as part of the environmental statement. It is therefore considered that removing the words altogether is probably more helpful than trying to clarify exactly what it means to who, where and when. (JS)	The Applicant refers to response REP5-043:20, this wording has been updated in **OCoCP (Revision 4)** [REP4-040].
REP5-043:22	ERYC were asked if the mechanics for consultation with themselves to be sufficient.	Confirmed yes (JS)	No response is required.
REP5-043:23	The ExA stated there appears to be agreement with ERYC that s61 consent would be the appropriate means to consult with the ERYC to agree in advance where core working hours may not be	It is considered appropriate that the applicant and contractors should lead on this. However, if we have concerns or are contacted by residents, then we would like the opportunity to	The Applicants agree with this response.

I.D.	Question	ERYC Response	Applicants' Response
	appropriate. ERYC comments were requested and to confirm if they were happy with the wording in terms of s61.	have contacts and discussions as appropriate depending on site location and circumstances. Confirmed yes to the wording (JS)	
REP5-043:24	ERYC were asked if there were any outstanding matters related to s61	Consider it to be adequately considered. Advised have worked with a similar scheme and every time that working was proposed outside the hours agreed there was contact with both the planner that dealt with the application and with environmental health to seek prior approval. Consider that a system very similar to that will work. However there may be more sensitive areas where more detailed discussions about construction techniques, use of plant and equipment where a section 61 agreement would be more appropriate. However confirm that happy with what's been proposed. (JS)	The Applicants agree with this response. The Applicants will work with ERYC Planning and Environmental Health team to identify requirements for CoPA Section 61 consents, as required under the Outline Code of Construction Practice (secured by **Draft DCO (Revision 9)** [document reference 3.1] Requirement 19).
Agenda Item 6 Historic Environment			
REP5-043:25	ERYC were asked to respond on the impact on Catfoss Hall	While it would be development within an agricultural setting, it wouldn't be something which you would normally associate with. In terms of the visual impact and the audible impact that it would have, it would affect how you experience that listed building. We do accept the point made that it would be temporary and it would only affect one element that contributes to the significance of the heritage asset, which is why it is identified as less substantial. The impact is relatively low and probably limited to the construction phase as opposed to being a long term impact. (RG)	The Applicants have previously noted that while construction works would be perceptible in the setting of Catfoss Hall, and that this perceptibility would be perceived as temporary works that would not affect the viewers perception of the historical or archaeological interests of the asset **The Applicants' Comments on the Responses to the Examining Authority's First Written Questions (ExQ1)** [REP4-087].
REP5-043:26	ERYC were asked to respond to the applicants comments about the impact of the construction corridor cutting across the access road to Catfoss Hall	No further comments were added.	No response is required.
REP5-043:27	ERYC were asked to expand on why they considered there would be less than substantial harm on Cobble Hall.	It is an attractive building. It's a good example of a local vernacular architecture set within a slight rise within the landscape, which gives it a bit more sense of place in the landscape. You can appreciate its architecture over a slightly longer distance in the wider landscape. The introduction of construction works within the wider setting is kind of incongruous to have the visual and audio effects. But again, they would be temporary and they would be extremely limited to the construction period if mitigated afterwards. Again, there's probably less impact on this because of that sense of separation. But again, it is development within that wider open landscape which would be incongruous (RB).	The Applicants have noted that while construction works would be perceptible in the setting of Cobble Hall, that this perceptibility would be perceived as temporary works that would not affect the viewers perception of the historical or archaeological interests of the asset (**The Applicants' Comments on the Responses to the Examining Authority's First Written Questions (ExQ1)** [REP4-087].

I.D.	Question	ERYC Response	Applicants' Response
REP5-043:28	ERYC were asked to expand on why they considered there would be less than substantial harm on Black Mill.	The Mill is no longer functional so a lot of its significance derives from its historical value as well a being a landscape feature. There would be some impact on how it is appreciated but the impact is limited to a particular viewpoint. The construction compound is screened. Also accept the applicants comments that there is other infrastructure visible in that view including some wind turbines. So accept there will be an impact but consider it to be less than substantial and quite low (RB)	The Applicants have noted that construction works would be perceptible in the setting of the Black Mill, but that this perceptibility would be limited to passing views as the viewer approached the works towards the cable route's crossing of Broadgate, in which the Mill is intermittently visible as a distant element of a horizon that is broken by intervening trees and hedgerows. This perceptibility would be read as a very minor and temporary change that would not affect the viewers perception of the historical or archaeological interests of the asset (**The Applicants' Comments on the Responses to the Examining Authority's First Written Questions (ExQ1)** [REP4-087]).
REP5-043:29	ERYC were asked to respond on a question related to the effects of construction of the converter station on Butt Farm scheduled monument	Noted that contribution to setting doesn't necessarily require public access or public visibility. So there is no catch all of when it will be classed as audible or visible. In terms of the impact we defer to Historic England who have made comments in their responses and raised some concerns. Do no wish to add anything more to what they have said (RB)	No response is required.
REP5-043:30	ERYC were asked for comments in response to the applicants comments on the post construction harm of the converter station on the scheduled monument as having no harm	Nothing more to add to previous comments but want to clarify that both ERYC and HE see a higher level of harm than that identified by the applicant. We identify that even with the mitigation it would still be a fairly dominant, intrusive intervention to the wider setting and does make an important contribution to the significance of the scheduled monument in the sense of it being a gun battery. That is naturally its function and its use and that function naturally has quite an important interrelationship with its wider landscape and the wider area around it. It is functioning as part of a wider defensive structure that is meant that is meant to be using its wider landscape. Even if there was natural landscape in that, such as the north west woodlands, it is not thought that any sort of planting scheme is necessarily going to replicate historic woodland. It is not necessarily going to change the fact that historically you had a functioning military site within an open natural landscape. You've currently got a former military site within a landscape that has changed a certain degree with road infrastructure etc but you would then have a military site within a landscape which is characterized by modern industrial development and infrastructure and associated planting that you associate with that sort of infrastructure. (RB)	The Woodland at Bentley Moor Wood was present during the entire operational life of the Butt Farm gun site, as shown in aerial photography submitted to the examination by Historic England in their responses to the **Examining Authority's first written questions** [REP3-043], Appendix A) and historic mapping provided by the applicant (**The Applicants' Comments on the Responses to the Examining Authority's First Written Questions (ExQ1)** [REP4-087], Appendix A). While the proposed planting does not replicate or seek to exactly replicate that woodland, a mixed deciduous woodland in this location) would appropriately reflect this historic use and the local historic landscape character.
REP5-043:31	ERYC were asked to comment on a change in stance between earlier comments related to the significance of the impact on the scheduled monument.	Earlier comments were reported incorrectly and it has always been considered substantial harm. (RB)	The Applicant discussed this matter with ERYC via email correspondence (28th May 2025) and notes that ERYC plan to submit a correction confirming that harm would be 'less than substantial' in this case. This was also confirmed by ERYC at ISH6.

I.D.	Question	ERYC Response	Applicants' Response
REP5-043:32	ERYC were asked to comment on the applicants earlier comments that the scheduled monument would remain in a rural setting with the arc of the line of fire intact.	Agree to a certain extent as there won't be any development within the arc of fire to the north west. Will have a large dominant structure within the wider setting which at the very least will form a background to views in and out of the site and alter how you appreciate the heritage asset. (RB)	The Applicants have previously made their case that the north-west arc of fire is the open view that is important to preserve (**The Applicants' Responses to Deadline 4 Documents** [REP5-037]) and draws the ExA's attention to NPS EN-1 Section 5.9.15 'Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably.'
REP5-043:33	ERYC were asked whether they considered the converter station would visually compete with the heritage asset?	Believe they would compete in the sense that there would be large structures within the wide environment and the scheduled monument was intended not to be seen and therefore is not prominent. So for visitors their eye would be drawn to the convertor station and associated planting and not the scheduled monument and compete with and detract from the experience. (RB)	The fact that the gun site was not intended to be seen and does not appear in any composed views, whether designed or fortuitous means that the value placed on views of the asset when considering change to setting is limited, as is reflected in the assessment presented in **Appendix 22-5 - Onshore Infrastructure Settings Assessment** [APP-178].
REP5-043:34	ERYC were asked if a visualisation should be produced that shows the access road from the scheduled monument.	Discussions too place with the applicant the week before and we did discuss whether there should be a visualization or not. Also raised a concern that they couldn't necessarily show where the access goes through the hedge on the northern side of the site. We felt a visualisation would help. (GV) (BB) Recalls that the applicant was going to consider the points raised. From an LVIA perspective a hedge appears from the year one to year 10 visualisations but not the access road. A visualisation would therefore be helpful for all stakeholders.	This visualisation has been produced and submitted to the examination at Deadline 4 as **Chapter 23 Landscape and Visual Impact Assessment Figure 23-1 to Figure 23-17 (Revision 4)** [REP4-039].
REP5-043:35	The ExA asked if the examining authority were minded to agree with Historic England and East Riding of Yorkshire Council that the proposed development would result in less than substantial harm to the setting of the heritage asset at the higher end of the scale if they consider that the public benefits of the scheme would outweigh such harm?	Agreed yes and referred back to the Local Impact Report where it was stated that weight could be placed on the substantial public benefits. (Additional note following the Hearing – the LIR did base this response on the provision of mitigation as suggested by HE). (GV)	The Applicants note the weighting placed on the provision of public benefit and notes their continued engagement with Historic England, the landowners and tenants of the Butt Farm site in order to ensure that the proposed enhancement works can be delivered.
REP5-043:36	The ExA stated they had asked if HE wanted to be added as a consultee on the D&AS. ERYC asked if that approach was supported.	Agreed (GV)	No response is required.
REP5-043:37	The ExA requested comments on cumulative effects of subsequent offshore projects to be developed which require infrastructure to be located adjacent to the scheduled monument.	There are other potential developments in that area but currently we do not have details and do not know whether they will all come forward. There are no above ground works immediately adjacent. However, it is difficult to give an answer at this stage. (GV)	No response is required.

2.3 Marine Management Organisation

Table 2-3 – The Applicants' response to the Marine Management Organisation's (MMO's) Deadline 5 Document [REP5-049]

I.D.	MMO Response	Applicants' Response
REP5-049: 1.1	**1. Comments on Doc Reference Applicant's Draft DCO Tracked Changes** **1.1 DCO and DML Major Comments** 1.1.1 In response to REP3-045:1.1, the MMO requested an update to include the maximum pile numbers, maximum dredge depth and maximum dredge volumes. The MMO agree with the Applicant that it is not possible to specify at this time and will be assessed at the post consent stage. The MMO considers this matter to be agreed.	The Applicants welcome the Marine Management Organisation's (MMO's) agreement.
REP5-049: 1.2	**1.2 Decommissioning** 1.2.1 The Applicants note that 'it is the explicit position of Government in the Guidance that the 'Energy Act' (2008) process should form a "one-stop shop" for decommissioning of offshore windfarms. The decommissioning programme which will be required under that Act includes the timing of the decommissioning to be undertaken, securing a limit on the operational life of the windfarm from before construction'. The Applicant accordingly maintains that the DCO does not need to duplicate this regime and should not seek to do so given the clear position of Government that the Energy Act (2008) is the appropriate mechanism for securing and controlling decommissioning. 1.2.2 The MMO believes an outline decommissioning plan should be submitted prior to construction.	1.2.1. No response required 1.2.2. The **Draft Development Consent Order (DCO) (Revision 9)** [document reference 3.1] includes requirement 7 which ensures that a written decommissioning programme must be submitted to the Secretary of State prior to commencement of each Project's offshore works. The Applicants would therefore hope that this issue is resolved.
REP5-049: 1.3	**1.3 Disposal** 1.3.1 The MMO are awaiting changes as per previous advice before designating the disposal sites.	The Applicants direct the MMO to the **Disposal Site Characterisation Report (Revision 3)** [REP5-025] submitted at Deadline 5.
REP5-049: 1.4	**1.4 Chemicals** 1.4.1 The MMO note that the Applicants have queried "Submissions for approval must take place no later than ten weeks prior to use" as 'The oil and gas standard request is eight weeks', The MMO have requested our standard 10 weeks to allow time for consultation and response.	The Applicants have previously (at Deadline 5) added the requested condition wording relating to chemicals to the Deemed Marine Licences (DMLs) within the **Draft DCO (Revision 9)** [document reference 3.1]. That wording includes reference to the ten week submission timeframe. The Applicants would therefore hope that this issue is resolved.
REP5-049: 1.5	**1.5 Coastal Processes** 1.5.1 The MMO notes that Applicants disagree with the need to monitor beach recovery due to the removal of the short trenchless crossing at landfall from the ES. The trenchless bore exit pits will not be located on the beach and therefore won't need monitoring. The MMO is currently reviewing this and will provide a response in Deadline 4 1.5.2 The MMO welcome changes to the modelling report and will provide comments at Deadline 6	The Applicants acknowledge the comments and direct the MMO to the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP5-040] submitted at Deadline 4.

I.D.	MMO Response	Applicants' Response
REP5-049: 1.6	**1.6 Repowering** 1.6.1 The MMO welcomes the Applicant's agreement on this subject and has no further comments.	The Applicants acknowledge this comment.
REP5-049: 1.7.1	**1.7 Fisheries** **Comments from REP2-061** 1.7.1 The MMO thanks the Applicants for clarifying that the vessel monitoring system (VMS) data included in the sandeel habitat suitability 'heat' map actually represents 5 years of VMS data (2016-2020), rather than a single year as indicated by the original figure legend. This is appropriate.	The Applicants welcome the MMO's agreement.
REP5-049: 1.7.2	1.7.2 With regard to REP2-061:19 which relates to the Applicants lack of acknowledgement of the North Sea Sandeel Survey (NSSS) data in the Preliminary Environmental Information Report (PEIR) and Environmental Statement (ES). The Applicant's response appears to confuse previous MMO comment that NSSS data should be included in the sandeel habitat suitability 'heat' map. To be clear, the NSSS data should not be included in the 'heat' map as it is not a layer described and assessed within the Kyle-Henney et al., (2024) methodology. Sandeel records in the OneBenthic database are included in the 'heat' mapping methodology but these records present anecdotal evidence of sandeel presence without abundance information. In comparison, the NSSS is a targeted sandeel dredge survey that has been carried out since December 2004 and includes a number of stations in and around the DBS OWFs. This survey represents the best source of abundance data for sandeel in the Dogger Bank region, which is an area of known high importance for sandeel as acknowledged by the Applicant throughout the ES. It was requested early in the application process that the Applicant should consult and present the NSSS data as part of the characterisation of the area around the DBS OWF array for sandeel. Further, the Applicant's comment that the NSSS data are of limited relevance to the DBS OWF because "Three sampling stations are located >10km south of the Offshore Export Cable Corridor but no samples are located within the cable corridor beyond the boundary between the Array Areas and Offshore Export Cable Corridor." This misrepresents the sampling points presented in Figure 1.1 of Appendix A which clearly shows there are indeed three sampling points within 20 Kilometre (km) of the Export Cable Corridor (ECC), but that there are also six sampling points within the DBS OWF array boundary, one sampling point between the diverging ECC routes for the East and West arrays, and another four sampling points within 20km of the array area boundary. Sandeel abundance data for each of these sampling points would have greatly supported the Applicant's characterisation of the area for sandeel. Although the MMO do not believe the presentation of this data at this late stage in the application process will significantly change the outcomes of the assessment, it is disappointing that the Applicant has failed to present this data, despite it being requested several times	It is stated within the response to REP2-061:19 (see **The Applicants' Responses to Deadline 2 Documents** [REP3-028]) that *"The NSSS data has several sampling stations within and around the DBS Array Areas, these overlap with the locations of OneBenthic samples which were determined by the **Heat Mapping Report** [AS-105] as being of high confidence supporting habitat for sandeel."* In combination with consideration of Figure 1.1 of Appendix A, no misrepresentation is made and full acknowledgement of these stations is provided within the paragraph previous to the one quoted by the MMO. North Sea Sandeel Survey (NSSS) abundance data has been explored on the DATRAS/ICES Data Portal, however no way to investigate these data as requested appears available. Whilst the dataset can be downloaded, spatial and abundance data are provided as separate files, with no way to match them. As a result, any abundance data relates to the entire North Sea area, presented within the indicative data extent window as reaching from the United Kingdon (UK) all the way to territorial waters of the Netherlands, Germany, Denmark, and Norway. As a result, any investigation of abundance data is not considered fit for purpose as it is currently available. As stated, the MMO acknowledge in REP5-049: 1.7.2 that they *"do not believe the presentation of this data at this late stage in the application process will significantly change the outcomes of the assessment".* It must be restated that, even in the absence of NSSS data, sandeel were assumed to have been present across the whole of the Offshore Development Area based on Reach *et al.* (2024) methodology heat mapping (i.e. the potential for spawning habitat is used as a proxy for sandeel presence, which is a worst case assumption). Whilst examination of NSSS data confirms this finding, it does not change any assessment made throughout the Environmental Statement (ES). This is clarified within REP2-061:19 where it is stated that *"the inclusion of NSSS would not add benefit to the assessment or change the conclusions of the **Heat Mapping Report** [AS-105]. Furthermore, sandeel were originally considered to be present within the Array Areas and assessed as such within the Environmental Impact Assessment (EIA), and therefore the addition of NSSS data would not alter the original EIA conclusions made within the ES."*
REP5-049: 1.7.3	Herring and Underwater Noise (UWN) from piling (REP2-061:22- REP2-061:23) 1.7.3 The MMO disagrees with the Applicants statement in REP2-061:22 that "the majority of impact pathways for the Projects relating to Atlantic herring spawning grounds occur within	The MMO's position is acknowledged, however the Applicants maintain that a precautionary approach has been taken already in the assessment (see bullets below), therefore the use of the 135dB limit is greatly over precautionary based on the number of limitations presented within the Hawkins *et al.* (2016) paper (i.e. the research undertaken

I.D.	MMO Response	Applicants' Response
	the Offshore Export Cable Corridor". Whilst the MMO is content with the Applicants statement that that there is "some degree of overlap with the Temporary Threshold Shift (TTS) extent for piling activities occurring in the northeastern extent of the potential spawning habitat", as shown by Figure 2.1 in the previous Heat Mapping Report: Atlantic Herring and Sandeel, the UWN contour for behavioural effects in herring (as a result of piling noise) shows significant overlap with the Banks herring spawning ground, and the MMO therefore consider this a significant pathway for impact. The MMO note that the Applicants have restated their opposition to the use of the 135dB SELss threshold for the purpose of modelling behavioural effects in herring in REP2-061:22. This opposition is noted, however this does not change the fact that the 135dB SELss threshold as defined by Hawkins et al., (2014) represents a precautionary but appropriate threshold for the purpose of modelling behavioural responses in herring at their spawning ground. The MMO's position on this will not change unless the Applicant can produce a compelling and appropriate alternative behavioural response threshold for clupeid fish. Please see points 1.7.33-1.7.37 for further discussion.	was carried out in an enclosed Scottish sea loch with limited anthropogenic noise (in contrast to the open-sea environment of the Dogger Bank) and that this experiment examined sprat rather than herring), and the statement by authors that the use of their findings are not appropriate for the purposes employed. Key elements of precaution within the Applicants' assessment are: • A maximum-case scenario has been used to assess potential impacts in the ES, with underwater noise model parameters being greater than would be expected during construction (e.g. hammer energy and number of hammer strikes); • The assumption that fish species do not flee during pile driving activities, with the underwater noise model being conducted for stationary receptors; • The use of the Kyle-Henney *et al.* (2024) heat mapping methodology to identify potential spawning habitat. Data-layers used to create the heat map are in themselves over-representative of spawning habitat, introducing precaution to assessments; • Assumption that Atlantic herring could be present in any location during pile-driving activities.
REP5-049: 1.7.4	1.7.4 In response to the Applicants assertion in REP2-061:22 that "for assessing the potential for a significant effect from TTS, the International Herring Larvae Survey (IHLS) data shows that the overlapping potential spawning habitat is not highly productive" as shown by Figure 2.7 of the Heat Mapping Report: Atlantic Herring and Sandeel, the MMO advised previously that the presentation of this figure should be amended so that the data can be more clearly interpreted. As outlined section 1.7 of REP4-115, the main issue with Figure 2.7 is that the Applicant has aggregated 15 years of IHLS data into a single plot which does not fully represent the spatial and temporal fluctuations in herring spawning intensity across the spawning ground over the time period. It is possible for areas of herring spawning grounds where spawning activity was previously low to be recolonised and so it is important to see these data presented as a separate map for each individual year of IHLS data, so that the relative importance of the spawning habitat which underlies the ECC can be clearly examined and assessed.	The Applicants have provided the requested abundance figures per year in **The Applicants' Fish and Shellfish Response to the MMO** [REP4-098] submitted at Deadline 4, including the additional categories to further define abundances >600 larvae per m² as requested by the MMO.
REP5-049: 1.7.5	1.7.5 Regarding REP2-061:23, The MMO supports that the Applicants have asserted that "On a precautionary and without prejudice basis, the Applicant have included noise reduction systems, such as Noise Abatements Systems (NAS), within the Projects' procurement strategy as an optional element, allowing the Projects to consider the use of NAS at the earliest point during the procurement process". However, there are a number of issues to consider here. The first is that the Applicant has not provided any modelling indicating what NAS would be considered and what the achievable noise reduction of these systems would be. It is therefore not possible to determine whether the systems employed at the point of construction would be sufficient to minimise noise emissions to within an acceptable level. Currently, this does not provide any evidence to inform a decision to support the Applicant's request for the removal of the recommended piling restriction. In the absence of evidence that a piling restriction is not required, we must apply the precautionary principle and thus recommend piling restrictions are included as licence conditions when the Deemed Marine Licence (DML) is granted.	Modelling of piling impacts associated with primary and / or secondary noise reduction measures leading to a 10dB reduction is presented within **Illustrative Underwater Noise Reduction Technical Note (Revision 2)** [REP5-032] and was submitted at Deadline 5. The Applicants are continuing to engage with MMO and Cefas on a 'without prejudice' basis to identify any potential areas of common ground in relation the requested noise restrictions.

I.D.	MMO Response	Applicants' Response
REP5-049: 1.7.6	1.7.6 Mitigation measures in the form of licence conditions are recommended for implementation at the consenting stage and are based on the information provided in the Applicant's ES, which is based on the maximum design scenario (MDS). It is commonplace for project design parameters to be refined post-consent, and requests are often made to reconsider whether mitigation measures are still necessary when taking into account the changes that have been made to the project. When this happens, a variation to the marine licence may be requested and new evidence is presented for review, such as revised underwater noise modelling based on the refined project parameters.	The Applicants acknowledge this comment.
REP5-049: 1.7.7	1.7.7 Regarding references to under water noise (UWN)arising from UXO clearance activities in REP2-061:23, the MMO is content with the Applicants response.	The Applicants welcome the MMO's agreement.
REP5-049: 1.7.8	<u>Herring and habitat destruction from cable laying (REP2-061:24 – REP2-061:28)</u> 1.7.8 The MMO note additional temperature data under Appendix A of the response document (Figures 2.1 – 2.4 and Figures 3.1 – 3.4) However, the MMO has a number of comments to make on the response provided in REP2-061:24 and REP2-061:27. i) Firstly, it is acceptable to use the 'TempMaxSam' seabed temperature data collected by IHLS surveys in the pre-2017 data, however the Applicant should recognise that the true seabed temperature for these samples may well have been lower than the value recorded as the maximum sample temperature taken from repeated samples. ii) Secondly, it cannot be clearly seen from Figures 2.1 – 2.4 and Figures 3.1 – 3.4 of Appendix A what the interannual variation in seabed temperature is as the Applicant has present four figures each for data collected between 2007-2017 and 2018-2023 by categorising the temperature data as being < 12°C (Fig 2.1 and 3.1), 12 – 12.8°C (Fig 2.2 and 3.2), 12.8 – 13°C (Fig 2.3 and 3.3), or as > 13°C (Fig 2.4 and 3.4). As explained in section 1.7 of REP4-115, it is not appropriate to present so many years of data in an amalgamated format (such as the Applicant has presented) as this prevents the spatial and temporal fluctuations in seabed temperature across the spawning ground from being examined across the time period. With this in mind, the MMO requests that the Applicant please present the data used to produce Figures 2.1 – 2.4 and Figures 3.1 – 3.4 of Appendix A as separate plots for each year of data, with the temperature of each sample point labelled. The current amalgamation of all seabed temperatures as either being < 12°C, between 12 – 13°C, or > 13°C does not offer enough resolution to support the Applicant's back calculation. iii) It would be helpful for the Applicant to provide a technical note which presents all the data used to underpin the back-calculation referenced in REP2-061:24 so that the back-calculation steps can be checked for accuracy and transparency against the data used to inform their back-calculation.	In reference to point 1.7.8 i), the Applicants recognise the limitations in the temperature data recorded by the International Herring Larvae Survey (IHLS). However, as stated by the MMO, the IHLS temperature dataset is acceptable for the purposes in which it has been used by the Applicants. In reference to point 1.7.8 ii), the Applicants acknowledge why interannual variation in seabed temperature is important for understanding how spawning activity fluctuates on an annual basis. The Applicants have presented the IHLS temperature data within the Cefas-approved categories defined by Kotthaus (1939) to show the locations where each of the temperature categories are represented. From these figures it is clear that the Offshore Export Cable Corridor (ECC) is represented by seabed temperatures of >13°C (Figure 2-4 and Figure 3-4 of **The Applicants' Response to Deadline 2 Documents** [REP3-028]). The Applicants would like to highlight that the MMO's request to provide separate figures for each year of IHLS abundance and IHLS temperature data has added an additional 26 figures to the submission, for the purposes of identifying one suitable temperature value for use in the back-calculation. Whilst it is important to understand the inter-annual variability of spawning for the Banks Atlantic herring population (as stated above), the EGL2 project has previously presented the requested annual IHLS temperature information. The Applicants have consistently referenced the EGL2 submission as a supplement to the assessment given its recent award of consent, the relevance of its location and the similarity in the information requests from the MMO. For the purposes of streamlining future assessments in the region, it is recommended that either the MMO or Cefas produces a guidance document for the Banks population containing all requested IHLS information. This would provide clear benefits in terms of delivering a standardised and streamlined approach which can be followed by marine projects seeking consent. In reference to point 1.7.8 iii), the Applicants have previously provided all relevant information for the back-calculation in the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105].
REP5-049: 1.7.9	1.7.9 Regarding REP2-061:26, The MMO recognise that a cumulative impact assessment has been undertaken by the Applicant, and that it is for the MMO and PINS as the competent authorities to ensure that significant degradation does not occur to sensitive marine features (in this case the Banks herring spawning ground at Flamborough Head). By implementing a	Temporal restrictions for the recently consented and geographically relevant EGL2 were refined to allow for a focussed period of restrictions relating to disturbance to gravid herring engaged in spawning. Uniformity for all projects would therefore allow for refinement of restrictions for the DBS Projects as determined via back-calculation, as presented within **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105]. This refinement has been

I.D.	MMO Response	Applicants' Response
	temporal restriction on works which interact with the seabed within the Banks Herring spawning grounds (including seabed preparatory works, cable trenching etc.) during the Banks herring spawning season (1 August – 31 October inclusive), uniformly for all projects which wish to deploy infrastructure through the spawning ground, the risk of disturbance to gravid herring engaged in spawning is negated. This would represent a tangible, meaningful step towards more strategic cumulative impact management by the responsible authorities.	presented and developed within **Appendix 10-3 Back-calculation of the Peak Atlantic Herring Spawning Period** [document reference 7.10.10.3] and submitted at Deadline 6.
REP5-049: 1.7.10	1.7.10 Regarding REP2-061:28, please see point 1.7.3 on the use of the 135dB SELss threshold defined by Hawkins et al., (2014) for the purpose of modelling behavioural responses in herring at their spawning ground.	See response to REP5-049: 1.7.3.
REP5-049: 1.7.11	1.7.11 Regarding REP2-061:29, the MMO support the Applicant's continued engagement with regards to these issues. It cannot be overstated that what the Applicant is trying to convey in their representations REP2-061:22 to REP2-061:28 is a complex approach to spatial and temporal refinement of the recommended restrictions which requires careful presentation and interpretation of multiple pieces of evidence to ensure that the data has been correctly interpreted and that the various risks to spawning herring, which in the MMO opinion remains at an unacceptable level, have been appropriately managed and suitably mitigated.	It is requested that this response is revisited in light of the additional evidence within the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105] and **The Applicants' Fish and Shellfish Response to the MMO** [REP4-098] which was not reviewed on provision of this comment.
REP5-049: 1.7.12	<u>Concerns</u> 1.7.12 There are several points of concern with the Applicant's response that the recommended herring spawning restrictions are not necessary. Firstly, The Applicant has referenced some seabed temperature data in their responses provided in REP3-028, however these responses are not comprehensive enough for the period of the recommended herring spawning restrictions to be temporally refined at this stage. If the Applicant wishes to carry out a back-calculation approach to accurately temporally refine the recommended restrictions in a way which is supported by appropriate evidence and literature, then they should provide a dedicated technical note which details their calculations. The MMO have provided instructions on how to appropriately carry out the back-calculation approach in points 1.7.14-1.7.28.	The Applicants acknowledge this comment.
REP5-049: 1.7.13	1.7.13 Secondly, presentation of separate maps for individual years of IHLS larval abundance data for the Banks herring spawning ground are yet to be provided. The MMO have also requested in point 1.7.8ii above that the Applicant should present individual years of seabed bottom temperature data because the current, amalgamated presentations of this data are not fully representative of the spatial and temporal variation in the data. For example, it is possible for areas of herring spawning grounds where spawning activity was previously low to be recolonised and so it is important to see these data presented as separate maps for each individual year of IHLS data so that the relative importance of the spawning habitat which underlies the ECC can be clearly examined and assessed (See point 1.7.29 for detail). As outlined in point 1.7.8 above, the same is true for the seabed bottom temperature data presented in support of the Applicant's request to temporally refine the recommended restrictions for herring. These data will be crucial, along with Particle Size Analysis (PSA) data quantifying the seabed sediment composition along the ECC, if the Applicant wishes to have	The Applicants have provided the requested abundance figures per year in **The Applicants' Fish and Shellfish Response to the MMO** [REP4-098] submitted at Deadline 4, including the additional categories to further define abundances >600 larvae per m² as requested by the MMO / Cefas. Please refer to the Applicants' response to REP5-049: 1.7.8 above for information regarding the IHLS temperature data. The Applicants have provided the Particle Size Analysis (PSA) data in the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105].

I.D.	MMO Response	Applicants' Response
	the recommended restriction on cable laying works in the herring spawning ground spatially refined.	
REP5-049: 1.7.14	Instructions on the Herring spawning period back-calculation approach 1.7.14 Below the MMO have outlined an acceptable approach to determining the 'peak' of herring spawning for the Banks population using a back-calculation approach and have provided an example of my workings. These instructions highlight some key points of understanding concerning North Sea autumn spawning herring reproduction and the IHLS and the Applicant will need to interrogate the data for themselves using a larger temporal dataset (see point 1.7.6), following the steps outlined below.	All comments relating to the back-calculation are addressed through **Appendix 10-3 Back-calculation of the Peak Atlantic Herring Spawning Period** [document reference 7.10.10.3] submitted at Deadline 6.
REP5-049: 1.7.15	1.7.15 Key points of understanding on herring reproduction: i) The Banks herring spawning season is understood to take place from 1st August to 31st October (inclusive) (see Ellis et al., 2012). ii) North Sea autumn spawning herring (including the Banks herring population) migrate from north to south during their spawning season and it is widely understood that spawning generally occurs earlier in the spawning season further north (see Cushing & Bridger, 1966; Burd, 1978 and Cushing, 2001), and later in the season further south, as the herring migrate southwards. This is also supported by IHLS data. iii) Herring do not arrive at their spawning grounds as one big shoal at the same time, but in 'waves' (Lambert, 1987), spawning across areas of suitable spawning habitat (gravel/coarse substrate). iv) The eggs develop for a period of days before hatching. The time taken for eggs to develop is dependent on sea bottom temperatures (see Russell, 1976). v) Larvae hatch with yolk-sacs attached which contain nutrients stored in the sac for survival. The newly hatched larvae remain on or close to seabed until their yolk-sacs are absorbed. The time taken for the yolk-sacs to be absorbed is also dependent on sea bottom temperatures (see Russell, 1976). vi) When the yolk-sacs have been absorbed, the larvae drift away from the spawning grounds.	
REP5-049: 1.7.16	1.7.16 Key points of understanding on the IHLS data: i) The IHLS is conducted every year across North Sea spawning grounds. The equipment used is a Gulf VII plankton sampler which is towed through the water and samples to a depth of approximately 5metres (m) above the seabed. ii) It is important to note that it does not touch the seabed so does not sample eggs, but 'newly hatched larvae'.	

I.D.	MMO Response	Applicants' Response
	iii) The International Council for the Exploration of the Sea (ICES) which conducts the IHLS classifies 'newly hatched larvae' as those <10-millimetre (mm) for Central North Sea (CNS; Banks) stocks (which is different to the <11m classified for Southern North Sea (Downs) stocks). iv) The timing of the IHLS is already clearly targeted to the 'peak' of when the herring larvae will be most abundant. The IHLS survey was originally comprised of three separate surveys which covered the full spawning period but has since been reduced; the full survey extent was originally 1st – 15th September (discontinued from 1999), 16th – 30th September (ongoing) and 1st – 15th October (discontinued from 2004). The survey has been reduced in duration not because the 'peak' period of spawning activity has reduced, but due to temporal and budgetary constraints. v) Hence, when attempting to determine the 'peak' of herring spawning activity, we can use IHLS data to establish the period when the newly hatched larvae are most abundant and work backwards from this to establish the period prior to this when spawning would have been most prolific, and the majority of eggs would have been laid. vi) Taking this approach requires an element of conservatism, especially given ICES latest advice on North Sea autumn spawning herring (which includes the Banks population) which the MMO have summarised in point 1.7.3 and considering that the most recently available IHLS data for the Banks spawning ground already represented a significantly reduced temporal period.	
REP5-049: 1.7.17	1.7.17 ICES' 2024 advice for herring in Subarea 4 and divisions 3.a and 7.d, autumn spawners (North Sea, Skagerrak and Kattegat, and eastern English Channel) notes that a continuous decline in the spawning population of North Sea herring has been observed over recent years. Given their concerns, ICES has proposed a reduction in the fishing quota of 22.5% for North Sea herring (to 412,383 tons in 2025). ICES further advises that no activities that might have a negative impact on the spawning habitat of herring (e.g., extraction of gravel and offshore renewable energy) should occur unless the effects of these activities have been assessed and shown to be non-detrimental. At present, ICES is not fully able to quantify the level and relative impact of cumulative non-fisheries anthropogenic factors on the reproductive capacity of the stock. However, the recommendation highlights the important link between habitat protection and population recovery ICES, 2024).	
REP5-049: 1.7.18	1.7.18 Key points of understanding on the limitations of performing a back-calculation: i) See points 1.7.15i and 1.7.15ii - whilst a 'peak' in spawning can be established, it must be remembered that spawning may occur at any time between 1st August and 31st October. ii) See points 1.7.15iii and 1.7.15iv – egg development and yolk-sac absorption are temperature dependent. Sea bottom temperature data used in the back-calculation is taken from previous years' IHLS surveys so may not necessarily represent sea bottom temperatures for future years.	

I.D.	MMO Response	Applicants' Response
	iii) See point 1.7.31iv. The central North Sea (CNS) IHLS survey period has already been refined to target the 'peak' of larval abundance (not for biological reasons) so further refinement of a 'peak' period requires careful consideration of an extended IHLS dataset to ensure that any identifiable trends in larval abundance throughout the whole survey period can be identified. For this reason, the Applicant should consider a timeseries of data much longer than the 10 years of data consulted thus far.	
REP5-049: 1.7.19	1.7.19 Approach to back-calculation: i) Start of 'peak' spawning period = start date of the peak of high larval abundance – (growth days + no. of days for yolk-sac absorption + no. of days for egg development) ii) End of peak spawning period = end of peak larval abundance. iii) IHLS data for the years 2003 – present should be used following the above approach, as these data are the best available evidence on herring larvae in the CNS.	
REP5-049: 1.7.20	1.7.20 The MMO have outlined the parameters that should be used in the back-calculation below and provided comments on the Applicant's use and interpretation of data under each of these headings: i) IHLS survey timings ii) Larval length in survey sample data iii) Larval length at hatching iv) Duration of egg development v) Duration of yolk-sac absorption vi) Growth rate	
REP5-049: 1.7.21	1.7.21 IHLS Survey Timings i) Thus far, the Applicant has consulted IHLS data for the Banks stock for the years 2007-2016 to reflect inter-annual variations in larval abundances in their characterisation. Given the limitation highlighted in point 1.7.18iii, the MMO recommend using a larger temporal range of IHLS data 2003 – present (noting that data for some years during this period may be absent e.g. due to Covid-19). The Applicant can focus on data from survey sample stations relevant to the project area, rather than the entire survey area. ii) The Applicant will need to interrogate data for this extended period (2003 – present) to determine the full extent of egg laying dates in the CNS.	
REP5-049: 1.7.22	1.7.22 Larval length in survey sample data For the Banks herring stock, ICES classify newly hatched larvae as those <10mm. We consider it acceptable to use a larval length of 9mm for use in the back-calculation, only on the basis that the majority of larvae caught in IHLS surveys are equal to or less than 9mm in length.	

I.D.	MMO Response	Applicants' Response
REP5-049: 1.7.23	1.7.23 Larval length at hatching IHLS data show hatch sizes of 5mm (minimum) and 6mm in significant quantities. A conservative approach should use the minimum (5mm), though the data should be interrogated by the Applicant independently of this example.	
REP5-049: 1.7.24	1.7.24 Duration of egg development i) The MMO have maintained that using the egg development periods cited in Russell (1976) is appropriate (despite the age of the data which informed this study) because it allows for a range of days to account for variations in egg development periods found in various studies and allowed for variations in parameters such as environmental conditions, the timing of spawning (e.g. spring or autumn), and the anatomical differences between spawning stocks used in the various studies. Thus, the egg development periods in Russell (1976) are suitably conservative – see Table 1. The MMO maintain that the periods specified in Russell (1976) are applicable and should be used in conjunction with sea bottom temperatures from the IHLS data for the nearest sampling locations to the project. The MMO have reviewed the IHLS sea-bottom temperature presented by the Applicant in Appendix A of their response document and have requested that the seabed bottom temperature data be presented annually in order to be fully examined (points 1.7.13 and 1.7.29). For the purposes of this worked example; assuming that temperatures at sampling stations within herring spawning habitat were between 12 - 13°C and in order to be conservative, we recommend that the maximum number of days is used, in this case 9 days based on the lower temperature of 12°C. Table 1 Egg development periods periods iii. Average temperature / iv. Days vii. 12 - 13° C / viii. 7-9 xi. 10 - 11° C / xii. 10-12 xv. 7 - 8° C / xvi. 14-18 xix. 3 -4° C / xx. 49 Table 2 Yolk absorption v. Average temperature / vi. Days ix. 12.8° C / x. 3 & 9 xiii. 12.0° C / xiv. 5 & 14 xvii. 10.7° C / xviii. 7 & 16 xxi. 10.3° C / xxii. 7 & 20 From Russell 1976.	
REP5-049: 1.7.25	Duration of yolk-sac absorption The duration of yolk-sac absorption was also the subject of the previous discussions. As with the egg development periods, using a range of days to account for variations in yolk-sac absorption development periods is more appropriate and conservative to allow for variations in environmental conditions, the timing of spawning, anatomical differences between spring vs autumn spawning stocks etc, and we maintain that the periods specified in Russell (1976) (Table 2) are applicable and should be used in conjunction with sea bottom temperatures from the IHLS data for the nearest sampling locations to the project (the OWF Array and the	

I.D.	MMO Response	Applicants' Response
	ECC). Again, in order to be conservative, we recommend that the maximum number of days is used, in this case 14 days based on a temperature of 12°C.	
REP5-049: 1.7.26	1.7.26 Growth rate i) There are a number of literature sources which provide data on growth rates in herring larvae, however, to the best of my knowledge, only one study contains growth rates based on field observations of North Sea herring larvae. Heath (1993) notes that growth rates estimated from field investigations of North Sea herring larvae have been approximately 0.2 to 0.3 mm d-1. On this basis, I would recommend an assumed larval growth rate of 0.25mm d-1. ii) The MMO have provided a worked back-calculation example below, based on the recommended process. The parameters used are considered sufficiently conservative, but not overly conservative, especially given the current state of the stock and ICES' latest advice.	
REP5-049: 1.7.27	1.7.27 Start of 'peak' spawning period = start date of the peak of high larval abundance – (growth days + no. of days yolk absorption + no. of days egg development) iii) tart date of peak high larval abundance: *16th September iv) No. of days to grow from hatch length (5mm) to length in survey sample (9mm) at growth rate of 0.25mm d-1: 16 days v) Duration of yolk-sac absorption: 14 days vi) Duration of egg development: 9 days Start of 'peak' spawning period = 16th September – (16 + 14 + 9) = 8th August. *End of peak spawning period = end of peak larval abundance = 1st October. Start and end of peak spawning period assumed for Demonstration Purposes ONLY, the Applicant should determine these dates from their independent interrogation of the CNS IHLS data for the years 2003 – present*	
REP5-049: 1.7.28	1.7.28 If the Applicant wishes to carry out a back-calculation approach to temporally refining the recommended herring spawning periods, then they should provide a dedicated technical note which details their calculations following the steps outlined above in the described sequence. This technical note should be accompanied by a spreadsheet with the raw data the Applicant has drawn on so that their working can be sense-checked for accuracy.	
REP5-049: 1.7.29	<u>Presentation of the Herring larval data presented annually</u> 1.7.29 It was raised in REP2-061 that the Applicant's presentation of 15-years of Banks IHLS data in one plot was not acceptable as it is not easy to determine the relative IHLS larval abundances with the sampling points for different years laid on top of each other. These data would be better presented as separate maps for individual years of data so that the relative importance of the area of spawning habitat which underlies the ECC can be clearly seen.	The Applicants provided the requested abundance figures per year in **The Applicants' Fish and Shellfish Response to the MMO** [REP4-098] submitted at Deadline 4, including the additional categories to further define abundances >600 larvae per m² as requested by the MMO.

I.D.	MMO Response	Applicants' Response
	Further clarification of the presentation that was expected was provided in a consultation response query email1, and provision of this evidence by the Applicant is pending.	
REP5-049: 1.7.30	1.7.30 Please see points 1.7.14-1.7.28 regarding the Applicant's responses to temporally refining the recommended herring spawning restrictions and details of the appropriate back-calculation approach which the Applicant should follow if they wish to use this method. If the Applicant wants to go down the route carrying out of a spawning back-calculation to temporally refine the recommended piling and cable laying restrictions, they should carefully follow the steps outlined under points 1.7.14-1.7.28 and present the evidence requested in full in a dedicated technical note for the MMO to review.	All comments relating to the back-calculation are addressed through **Appendix 10-3 Back-calculation of the Peak Atlantic Herring Spawning Period** [document reference 7.10.10.3] submitted at Deadline 6.
REP5-049: 1.7.31	1.7.31 The back-calculation approach cannot be used to spatially refine the recommended restrictions. Spatial refinement is only possible for the recommended restriction on cable laying activities in the herring spawning ground, as due to the dispersive nature of impulsive UWN effects it is not possible to spatially refine the recommended piling restriction, unless the Applicant wishes to pursue a spatial zoning approach in their piling programme which will be more labour-intensive during this Examination period than simply committing to implementing noise abatement systems and providing supporting modelling of the mitigated UWN impact ranges. In order to reduce the range of effect from UWN as a result of piling, the Applicant should explore noise abatement options as the current modelled range of UWN-related impacts (physiological and behavioural) relative to the Banks herring spawning ground presented at present is not acceptable.	All comments relating to the back-calculation are addressed through **Appendix 10-3 Back-calculation of the Peak Atlantic Herring Spawning Period** [document reference 7.10.10.3] submitted at Deadline 6. It is noted that the back-calculation approach specifically relates to the proposed licence conditions imposed onto cable-laying activities only.
REP5-049: 1.7.32	1.7.32 To spatially refine the recommended restriction on cable works along the ECC during the herring spawning season, the Applicant needs to present the requested annual heatmaps of IHLS larval abundance data, along with PSA data quantifying the seabed sediment composition along the ECC with the Kilometre Points (KP) points for the ECC indicated. Mapped PSA data for the ECC should be overlaid over the British Geological Survey (BGS) broadscale sediment data map and can be further supplemented by the addition of PSA data from the Cefas OneBenthic Grab/Core data extraction tool[1].	The Applicants provided the requested abundance figures per year in **The Applicants' Fish and Shellfish Response to the MMO** [REP4-098] submitted at Deadline 4, including the additional categories to further define abundances >600 larvae per m² as requested by the MMO / Cefas. It is noted that in the meeting held between the MMO/Cefas and the Applicants (13th May 2025) it was agreed that IHLS abundance heatmaps (similar to those presented by Rampion 2) are not appropriate as they do not follow the Kyle-Henney *et al.* (2024) methodology. Therefore, the Applicants will not present heat maps of IHLS Abundance data. PSA data and EMODnet 1:250k seabed sediment data were presented and discussed within the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105]. The relevant Kilometre Points (KPs) were provided for each PSA sampling station. OneBenthic PSA data was not collected on behalf of the Projects, therefore it is not considered as representative of current seabed conditions as the project-specific PSA data. It is noted that the EMODnet 1:250k seabed sediment data replaces the BGS 1:250k seabed sediment data within the Kyle-Henney *et al.* (2024) methodology. For the benefit of the ExA, the EMODnet 1:250k seabed sediment data actually utilises the existing BGS 1:250k seabed sediment data within the UK Exclusive Economic Zone (EEZ), however the EMODnet data presents a greater spatial extent of seabed sediment data than the BGS data. The Kyle-Henney *et al.* (2024) methodology utilises the greater spatial extent of the EMODnet data to provide wider context

[1] https://rconnect.cefas.co.uk/onebenthic_dataextractiongrabcore/

I.D.	MMO Response	Applicants' Response
		(e.g. population-scale) than could be achieved with the previous Reach *et al.* (2013) methodology (that was based on the BGS data). The Applicants therefore consider that all requested information has been presented. Please refer to the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105] for further information regarding the spatial refinement of the restriction, based on the project-specific PSA and EMODnet data. For reference, the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105] identifies ground-truthed preferred and marginal potential spawning habitat between ST161-ST162 (approx. KP10-KP15) and ST166-ST167 (approx. KP30-KP40) only. This represents two extents of the ECC between approx. KP10-KP15 and KP30-KP40 respectively.
REP5-049: 1.7.33	MMO position on 135db threshold 1.7.33 A key aspect of the UWN modelling for the DBS OWF will be whether the range of noise impact from piling is likely to overlap the herring spawning ground at Flamborough Head and cause disturbance to herring during their spawning season. In this context, the term '*Disturbance'* describes the ecological response of herring when affected by UWN pressure arising from piling) and is inherently linked to the physiology and behaviour of herring. In this instance, 'disturbance' of herring as a result of UWN arising from piling produces physiological (TTS etc.,) responses which then influence survivability (e.g., ability to detect predators) as well as behavioural responses (e.g., avoidance of migratory routes due to acoustic barriers) which then influence reproductive success (e.g., ability to reach spawning grounds at the appropriate time and successfully carry out spawning).	The MMO's position is acknowledged, however the Applicants maintain that a precautionary approach has been taken in the assessment already, therefore the use of the 135dB limit is greatly over precautionary based on the number of limitations presented within the Hawkins *et al.* (2016) paper, and the statement by authors that the use of their findings are not appropriate for the purposes employed. The Applicants' responses to these points are provided within Appendix B of **The Applicants' Responses to ExQ2** [REP5-036]. As originally stated within Appendix B of **The Applicant's Response to Deadline 2** [REP3-028], it is reiterated that it is the Applicants' opinion that to use the 50% response level of 135 dB re 1 µPa2s SELss would be to intentionally misinterpret the results of the cited papers and ignore the authors' clear conclusions. As such, we would dispute the claim that the Hawkins *et al.* (2014) research establishes the best-available scientific evidence but rather that it presents preliminary findings that will be important to establish a more comprehensive behavioural disturbance metric in future studies. In contrast, the current assessment uses the established criteria in Popper *et al.* (2014), as this approach has been developed specifically to provide a science-based criteria for effects of anthropogenic sound (including pile driving and shipping) on fishes.
REP5-049: 1.7.34	1.7.34 The criteria for behavioural responses in fish included in the Popper et al., (2014) guidelines are qualitative and broad by nature, owing to the inherent difficulties in quantifying the various ecological and behavioural responses of different fish species to underwater noise at varying distances. As a result, given that these criteria can only be broadly defined, they can neither be considered conservative or unconservative. Furthermore, qualitative behavioural criteria cannot be easily mathematically modelled to illustrate a range of impact. Accordingly, quantitative modelling of UWN impact ranges cannot be done appropriately with qualitative criteria. Determination of the maximum spatial extent of likely behavioural impacts can only be achieved by modelling a quantitative threshold, based on the best available evidence.	
REP5-049: 1.7.35	1.7.35 For the purpose of modelling behavioural responses in herring at their spawning ground, a threshold of 135dB (SELss) is recommended by Cefas Fisheries advisors as a conservative indicator of the risk of a behavioural response, especially for clupeid fishes such as herring. This 135-dB threshold is based on research by Hawkins et al., (2014), who exposed wild schooling sprat to short sequences of repeated impulsive playback sounds at different sound pressure levels, to resemble that of a percussive pile driver. Observed behavioural responses included the break up of fish schools. The sound pressure levels to which the fish schools responded on 50% of the presentations were 163.2 and 163 dB re 1 µPa (peak-to-peak), and as a result the concluded single strike sound exposure level was 135 dB re 1 µPa2 ·s. The MMO recognise that this may be a conservative threshold as the Hawkins study was carried out in Lough Hyne, which is an enclosed, quiet coastal sea loch, where fish were not accustomed to heavy disturbance from shipping and other sounds (Hawkins et al., 2014).	

I.D.	MMO Response	Applicants' Response
	However, the study species, sprat, are a clupeid species meaning sprat are closely related and anatomically similar to herring, and similarly sensitive to underwater sound (sprats also possess a swim bladder involved in hearing). Given an absence of other peer-reviewed empirical evidence of behavioural responses in clupeid fishes to support an alternative threshold for quantitatively modelling the impact ranges for impulsive noise, Hawkins et al., (2014) is currently considered the best available scientific evidence by Cefas Fisheries and Underwater Noise specialists, and as such 135dB is deemed an appropriate threshold for modelling behavioural responses. Notwithstanding, the MMO would be willing to consider the use of an alternative quantitative threshold for modelling behavioural responses in herring (or a similar clupeid fish), should the Applicant be able to provide one which is based on suitable, peer-reviewed literature.	
REP5-049: 1.7.36	1.7.36 The MMO nonetheless recognise the limitations of this study, for example it is accurate that the 135dB SELSS threshold was determined based on sprat schooling in the water column rather than sprat (or herring) engaged in spawning. However, there is little empirical evidence to indicate how herring (or sprat) engaged in spawning activity may respond to impulsive piling noise. For example, herring may display a biological drive to spawn regardless of the UWN disturbance, however, it is equally possible that such disturbance may cause herring to abandon necessary migrations to the gravel beds on which they need to spawn in order to escape the disturbance, potentially resulting in reduced spawning success and limited recruitment of herring larvae into the North Sea stock. Limited available research into the behaviour of herring engaged in spawning, has indicated that spawning aggregations gather in high densities over a smaller area of seabed than schooling fish involved in migration or feeding (Nøttestad et al., 1996), and during the period of spawning, herring which have spawned do not disperse but remain in the water column above the demersal spawning aggregation (Axelsen et al., 2000).	
REP5-049: 1.7.37	1.7.37 In response to the Applicant's comment that the 135dB threshold should not be incorporated into MMO advice for the purposes of EIA as a behavioural threshold based on the cautions provided by (Hawkins and Popper, 2014; Hawkins et al., 2014), The MMO must restate that in the absence of appropriate, empirical evidence indicating that herring will continue to spawn when subject to UWN disturbance, or the production of an alternative threshold or a more sophisticated approach (such as the "distance of effect" reported for in-situ behavioural studies), which is based on suitable, peer-reviewed literature, a precautionary approach, based on the best available, peer-reviewed evidence, should be adopted (ICES, 2003, 2015, 2018). For the reasons given above, we consider that the 135dB (as per Hawkins et al., 2014), although not explicitly perfect, represents a precautionary but appropriate threshold for the purpose of modelling behavioural responses in herring at their spawning ground. Our position will not change unless the Applicant can produce a compelling and appropriate alternative behavioural response threshold for clupeid fish.	
REP5-049: 1.8.1	**1.8 Benthic** 1.8.1The nearshore Zone of influence (ZoI) for changes in suspended sediment concentrations due to cable installation has been updated from 14 km to 28 km as modelling work indicated 28 km was the maximum plume extent close to the coast. The maximum	The Applicants welcome the MMO's agreement.

I.D.	MMO Response	Applicants' Response
	plume size in the array area was modelled as 2 km. Therefore, the Applicant considers the application of an offshore 14 km ZoI to be an appropriate approach. While the MMO defer to the relevant specialist advisor regarding the calculation of maximum plume sizes at different levels in the water column and at the different locations (nearshore through to offshore), the MMO consider the approach sound. The MMO note the Applicant proposes no change to the assessment as no further receptors were identified due to the increase in nearshore ZoI (Section 1.1. of the benthic ecology technical note document referenced in paragraph 6).	
REP5-049: 1.8.2	1.8.2 Regarding the Benthic Ecology Technical Note (document referenced in paragraph 6), the MMO defer to the expertise and response of the relevant SNCB regarding potential effects of the project on protected features within designated areas. The MMO note that there is no impact pathway for direct effects on the Holderness Inshore and Holderness Offshore Marine Conservation Zones (MCZs) and the Flamborough Head SAC because of cable installation works. The Applicant predicts that increased suspended sediment concentrations could arise during cable installation, and operation and maintenance activities. However, the increase in ZoI, from 14 km to 28 km, did not alter the conclusions of the assessment and the Applicant has confirmed that all subtidal features of the SAC and MCZs "were considered irrespective of their mapped location within the site".	No response is required.
REP5-049: 1.8.3	1.8.3 The MMO agree with the Applicant's assessment regarding the magnitude of the impact from increased suspended sediment concentrations (SSCs) and that the maximum deposition resulting from trenching is likely to occur in the region immediately adjacent to the activity and outside the MCZs and SAC. The MMO also agree with the Applicant's determination of the significance and magnitude of the effect of SSC on benthic receptors. However, The MMO defer to the relevant SNCB regarding the potential impact of increased SSC on the conservation objectives at the Holderness Inshore and Holderness Offshore MCZs and Flamborough Head SAC.	The Applicants welcome the MMO's agreement.
REP5-049: 1.8.4	1.8.4 The MMO have no further comments regarding the high-level proposals for benthic sampling in response to Section 1.4 BE.1.12 (document referenced in paragraph 7). The proposal includes relevant grab sampling and seabed imagery acquisition to provide suitable data for comparison with the post-construction condition of the seabed at a subset of locations within the array and export cable corridor. It is the MMO's understanding that details of the proposed post-consent monitoring will be provided for review in advance of survey and the Applicant will consider all relevant guidance, including the MMO post-consent monitoring standards document, due in 2025.	The Applicants acknowledge this comment.
REP5-049: 1.9	**1.9 Coastal processes** 1.9.1 The Coastal Erosion Technical Note has been updated due to the comments made by Natural England (NE); which requested that the National Coastal Erosion Risk Mapping project (NCERM2) is added to this document. In summary, concerns were that the beach elevation change data presented was out of date (2008 – 2015), the use of UK Climate Projections (UKCP18) emission scenario at 50% confidence level was not consistent with the NCERM2's use of 70th and 95th percentile confidence levels.	The Applicants welcome the MMO's agreement.

I.D.	MMO Response	Applicants' Response
	1.9.2 Updated erosion rates have been provided (up to 2024) by the applicant and the applicant has included data from the 70th and 95th percentile for emission scenarios. These emission scenarios have been included when predicting cliff erosion rates and the maximum erosion distance for the cliffs. The inclusion of this data does not affect the original assessment due to the commitment to trenchless techniques for cable installation means there should be no significant effect to the Holderness cliffs. 1.9.3 The use of the NCERM2 model has provided erosion estimates that are smaller than the previous methodology of the Leatherman equation (1990) and reported on in Chapter 8 Marine Physical Environment. The MMO agree with this conclusion.	
REP5-049: 1.10	**1.10 UWN** 1.10.1 The MMO have no further comments to make on Appendix 11-6 Unexploded Ordnance Clearance Information and Assessment (Revision 3) [REP3-012]	The Applicants acknowledge this comment.
REP5-049: 1.11	**1.11 Dropped Objects** 1.11.1 The MMO welcome the updates to Condition 13 (10), (11) and (12) and has no further comments.	The Applicants acknowledge this comment.
REP5-049: 2.1	**2. Comments on Applicant's amended application Documents** **2.1 General Comments** i) REP2-018 - 7.8.8.3 Environmental Statement Appendix 8-3 – Marine Physical Processes Modelling Technical Report (Revision 3) (Tracked) ii) REP2-026 - 8.6 Commitments Register (Revision 2) (Tracked) iii) REP2-036 - 8.18 Disposal Site Characterisation Report (Revision 2) (Tracked) iv) REP2-040 - 8.20 Cable Statement (Revision 3) (Tracked) v) REP2-042 - 8.21 Outline Project Environmental Management Plan (Revision 2) (Tracked) vi) REP2-044 - 8.23 In Principle Monitoring Plan (Revision 2) (Tracked) vii) REP2-046 - 8.24 Outline Offshore Operations and Maintenance Plan (Revision 3) (Tracked) viii) REP2-048 - 8.25 Outline Marine Mammal Mitigation Protocol (Revision 3) (Tracked) ix) REP2-050 - 8.26 In Principle Site Integrity Plan for the Southern North Sea Special Area of Conservation (Revision 3) (Tracked) x) REP2-052 - 8.27 Outline Scour Protection Plan (Revision 3) (Tracked) xi) REP2-054 - 8.28 Outline Fisheries Liaison and Co-existence Plan (Revision 3) (Tracked)	No response is required.
REP5-049: 2.2	**2.2 REP2-040 - 8.20 Cable Statement (Revision 3) (Tracked)**	The Applicants acknowledge this comment.

I.D.	MMO Response	Applicants' Response
	2.2.1 The MMO welcomes the updates to this document and has no further comments to add	
REP5-049: 2.3	**2.3 REP2-044 - 8.23 In Principle Monitoring Plan (Revision 2) (Tracked)** 2.3.1 With regard to REP3- 045:2.4 which the MMO have requested: 2.3.2 The MMO's current position is that at least two of the first four piles should be the worst-case piles This has changed from previous OWF examinations due to the monitoring being provided on projects in the construction stage highlighting concerns in the predictions made, along with issues raised by the Statutory Nature Conservation Body's (SNCBs). The MMO understands that the Applicant's require flexibility as usually the first four piles are softer sediment to ensure the equipment is working as expected. However, the MMO requires commitment that two of the worst-case piles will be monitored, this may be after the first four piles, but this would allow the predictions to be validated. Or if this is not possible how the ES predictions can be validated fully at the post consent stage. This commitment should be updated within the condition 2.3.3 The MMO is currently reviewing the condition wording with SNCBs including the submission date of the data and may suggest updated wording in due course. The MMO welcomes further discussions with the App on this request and how it can be captured within the DML.	2.3.1 - 2.3.3. The Applicants discussed this point with the MMO at a meeting on 13th May 2025. At that meeting the MMO confirmed that they would be content that this monitoring was agreed post-consent and the Applicants agreed to update the **Commitments Register (Revision 2)** [REP2-025] (which will be re-submitted at Deadline 7) to add a commitment to having these future discussions.
REP5-049: 3	**3. Remaining DCO/DML comments not agreed with applicant** 3.1.1 The MMO and the applicant are not in agreement with the following topics: (amend as required) • Decommissioning • Chemicals • Definitions • Force Majeure 3.1.2 Please see Annex 1 Table 1 for details of all outstanding issues.	The Applicants acknowledge the MMO's comments. Please see **Table 2-4** for further information.

Table 2-4 - Annex 1 Table 1 [REP5-049]

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
1	Part 1 – Preliminary Interpretation (2)(1)	"building" includes any structure or erection or any part of a building, structure or erection;	Please can the Applicant confirm that 'building' does not include any offshore structures, and therefore that the protective works to building schedule does not apply to offshore structures.	The Applicants previously responded as follows to this point and would hope that this matter is now resolved (see ID REP2-061: A1 in The Applicants' Reponses to Deadline 2 Documents (Revision 1) [REP3-028]): "The Applicants have reviewed the use of the word "building" in the Draft Development Consent Order (DCO) (Revision 6) [document reference 3.1] and can confirm that it is only	The MMO welcomes the Applicant's updates and has no further comments.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
				used in the context of buildings that are located onshore. However, the definition of "building" is well precedented and it is not proposed to amend it."		
2		""DBS East Project offshore works" means Work Nos. 1A to 9A and any other authorised development and ancillary works associated with those works. "DBS West Project offshore works" means Work Nos. 1B to 9B and any other authorised development and ancillary works associated with those works.	The MMO notes that works 9A and 9B have been included in the offshore works. The works are to provide means of emergency access along the existing beach between Work No. [....] to allow for access in the event of accidents and / or environmental incidents. Can the Applicant clarify when these activities will be undertaken (when is it an emergency?), if these works include any marine licensable activities or if the works will impact the environment e.g. abrasion/disturbance to a priority habitat.	These works will not include any marine licensable activities. These elements of the works have been included to afford vehicular access to the intertidal area to allow the clean-up of any drilling fluids which could escape from the bores drilled beneath the beach as part of the trenchless crossing works (e.g. Horizontal Directional Drilling works) at landfall.	It is not MMO standard to include areas of non-licensable activities within a marine licence. The MMO understands why these works are included and are reviewing how to capture these. The MMO and the Applicant discussed this on 13 May 2025 and there are ongoing discussions in relation to how this is connected to an activity within the DML. The MMO is hopefully this can be resolved prior to Deadline 7.	In order to address this point, the Applicants have amended the **Draft DCO (Revision 9)** [document reference 3.1] to remove Work Nos 9A/B from the definition of "DBS East Project offshore works" and "DBS West Project offshore works" respectively and add those Work Nos to the definition of "DBS East Project onshore works" and "DBS West Project onshore works" respectively. This amendment only applies to the definitions within each of the DMLs and not to the definitions within Article 2 of the DCO, which will remain as currently drafted.
6		"MHWS" or "mean high water springs" means the highest level that spring tides reach on average over a period of time;	The MMO request the definition is updated to: 'The height of Mean High-Water Springs (MHWS) is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest (Spring tides).	This definition is well precedented and commonly included in DCOs. No change to the **Draft DCO** [APP-027] is proposed.	The MMO welcomes the Applicant's update to this definition and have no further comments.	The Applicants welcome the MMO's agreement on this matter.
7		"undertaker" means, subject to article 5 (benefit of Order),— (a) for the purposes of constructing, maintaining and operating the DBS East works and any related ancillary works, DBSEL; (b) for the purposes of constructing, maintaining and operating the DBS West works and any related ancillary works, DBSWL; and (c) in	The undertaker definition must be updated. This should exclusively be the named companies (RWE Renewables UK Dogger Bank South (East) Limited, company reference number 13656240 and RWE Renewables UK Dogger Bank South (West) Limited, company reference number 13656525,).	The Applicants disagree that transfers of the DMLs should be regulated by the provisions of section 72 of the Marine and Coastal Access Act (MCAA) 2009. Where a transfer of a DML is proposed, the SoS would be looking at that in the context of all the provisions of the DCO. There are some Articles and Requirements relating to offshore matters within the DCO which overlap with the DMLs. In that context, it is entirely appropriate that the SoS has the ability to approve the transfer of a DML. Article	Two points still exist: 1) ToB including the DML The MMO acknowledges the Applicants comments however still maintains that reference to the DMLs in Article 5 should be removed and therefore the definition updated. Please see section 1.2 in REP2-061 for more information.	1. The Applicants acknowledge the MMO's position but are of the view that agreement is unlikely to be reached on this point for reasons set out in previous submissions. 2. As stated in **The Applicants' Responses to Deadline 3 Documents** [REP4-088] (row 7 of Table 2-3):

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
		any other case, DBSEL and DBSWL;	In addition, the Applicant should remove 'subject to article 5' (benefit of the order). The above updates should also be made to the DBSEL and DBSWL definitions.	5(14) confirms that section 72(7) and (8) (variation, suspension, revocation and transfer) of the 2009 Act does not apply to a transfer of the DMLs falling within Article 5. Section 72(7) permits the licensing authority to transfer a marine licence to another person. Section 72(8) provides that "a licence may not be transferred except in accordance with subsection 7". Article 5 however provides for a transfer to take place n a different way to section 72(7). Since Article 5 is different from the precise wording of section 72(7) of the 2009 Act it is necessary to specify that section 72(7) only applies to a transfer not falling within Article 5 in order to enable Article 5 to operate. Without specifying this, Article 5 might be claimed to be inoperative because of adopting a different wording from section 72(7). The Applicants also note that this approach is aligned with "good practice point 11" in the Planning Inspectorate Advice Note 15: drafting Development Consent Orders (2018), which states that "Applicants should give careful consideration to the terms of the transfer Article they include in their draft DCO so as to ensure that it reflects how they envisage the NSIP being operated post-consent and, if possible, avoid potential inconsistencies between how DCO and DML transfer arrangements would operate." The Applicants' approach is intended to ensure that inconsistencies in the transfer arrangements do not arise.	2) Company Reference Number (CRN) To ensure all parties are aware of who the undertaker is within compliance activities the CRN must be included within this. This is standard on marine licences and there is no justification provided to date why this cannot be included.	*"In relation to the reference to company numbers, the Applicants note that these are already included within the definitions of "DBSEL" and "DBSWL" within the interpretation provisions of each of the DMLs and the definition of "undertaker" refers to either DBSEL or DBSWL as appropriate and so the Applicants consider that this matter can be resolved."*
8		(7) In this Order "includes" must be construed without limitation unless the contrary intention appears.	The MMO are discussing this section internally and will provide further comments in due course.	It is noted that the MMO are discussing this subparagraph. The Applicants note that this wording is well precedented and commonly included in DCOs. To address the MMO's request, examples of other offshore wind DCOs where this wording has been included include Hornsea Four, East Anglia One North, East Anglia Two, Norfolk Vanguard and Norfolk Boreas. The Applicants	The MMO is content with the current wording and has nothing to add at this stage.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
				confirm that this wording is included in Article 2 of the Draft DCO (Revision 7) [document reference 3.1] and not in the individual DMLs.		
11	Part 1 – Preliminary Interpretation (3)	Please see section 3.3.1 in this document for further information	Please see section 3.3 in this document for further information.	For the reasons set out below, the Applicants do not agree with the removal of the parts of Article 5 of the Draft DCO [APP-027] requested by the MMO. Paragraph (14) of Article 5 disapplies sections 72(7) and (8) of the Marine and Coastal Access Act 2009 in relation to a transfer or grant of the benefit of a Deemed Marine Licence (DML). The drafting is based on the Model Provisions and reflects a long- established precedent regarding the transfer of DCO powers and DMLs that has been endorsed by the Secretary of State (SoS) many times, including most recently in the Sheringham Shoal and Dudgeon Extensions DCO. Where a transfer of the DML is sought under Article 5, the SoS would consider the appropriateness of the party to whom the transfer or grant is proposed and would also take into account any representations made by the MMO before determining whether to grant consent, noting that Article 5 (paragraphs (6) and (9)) includes provisions requiring notification and consultation with the MMO where a transfer or grant of the benefit of a DML is proposed. From a procedural perspective, it is important that the DCO and any DML can be transferred together using the process set out in Article 5. It is considered important that the timing of any transfer or grant of powers/ authorisations under the DCO and a DML be aligned, as there is considerable overlap between the authorisations and the requirements/conditions. This justifies a departure from the procedure under the Marine and Coastal Access Act 2009. Having deemed the marine licence in the DCO, it is also appropriate that any transfer under the Order include the DML as part of the wider transfer- it is one element of the wider order powers and	The MMO still maintains that reference to the DMLs Article 5 should be removed. Please see Section 1.2 of REP2-061 for more information.	The Applicants acknowledge the MMO's position but are of the view that agreement is unlikely to be reached on this point for reasons set out in previous submissions.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
				should not be separated out from the authority to construct, operate and maintain the Nationally Significant Infrastructure Project (NSIP) granted by the Order. The PA 2008 is clear that marine licences may be deemed in a DCO in appropriate areas (s149A) and that a DCO may include such further provisions ancillary to the operation of that DML (s122(3)), including transfer of the benefit. Section 122(5)(a) and (c) set out that a DCO may "apply, modify or exclude a statutory provision which relates to any matter for which provision may be made in the order" or "include any provision that appears to the Secretary of State to be necessary or expedient for giving full effect to any other provision of the order". The ability to transfer a DML is related to the deeming, and it is therefore a sensible, expedient part of the wider power to transfer the benefit of the order. Overall, the drafting of this article reflects the equivalent provision in recent offshore wind DCOs including Hornsea Three, Norfolk Boreas, Norfolk Vanguard, East Anglia One North, East Anglia Two, Awel y Mor, Hornsea Four and Sheringham Shoal and Dudgeon Extensions. As noted above, this article is necessary to provide the Applicants with the appropriate commercial freedom to sell or lease the authorised projects while ensuring that the SoS can control such sale or lease through the need to obtain their consent.		
15	Part 4 – Interpretation	36. —(1) This article applies to— (a) any agreement for to any person the whole or any part of the authorised project or the right to operate the same; and (b) any agreement entered into by the undertaker with any person for the construction, maintenance, use or operation of the authorised project, or any part of it; so far as the agreement relates to the	Please confirm this is for onshore works only.	This wording is well precedented and commonly included in DCOs. As stated in The Applicants' Reponses to Deadline 2 Documents (Revision 1) [REP3-028] (ID REP2-061:A15): "The Applicants acknowledge the MMO's comments. The intention of Article 36 is that it would apply to the onshore elements of the Projects. It is not thought that it would be necessary for Article 36 to apply to offshore elements i.e. to an agreement for lease or lease from the Crown	The MMO are content with the Applicant's explanation and is content that there are no changes needed.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
		terms on which any land that is the subject of a lease granted by or under that agreement is to be provided for that person's use. (2) No enactment or rule of law regulating the rights and obligations of landlords and tenants prejudices the operation of any agreement to which this article applies. (3) Accordingly, no such enactment or rule of law applies in relation to the rights and obligations of the parties to any lease granted by or under any such agreement so as to— (a) exclude or in any respect modify any of the rights and obligations of those parties under the terms of the lease, whether with respect to the termination of the tenancy or any other matter; (b) confer or impose on any such party any right or obligation arising out of or connected with anything done or omitted on or in relation to land that is the subject of the lease, in addition to any such right or obligation provided for by the terms of the lease; or (c) restrict the enforcement (whether by action for damages or otherwise) by any party to the lease of any obligation of any other party under the lease.		Estate. However, given that the current wording is based on the model provisions and well precedented in DCOs, the Applicants do not propose to update the drafting.		
16	Part 7 Miscellaneous and general Abatement of works abandoned or decayed	43.—(1) Where the DBS East Project offshore works or any part of them are abandoned or allowed to fall into decay the Secretary of State may, following consultation with DBSEL, by notice in writing require DBSEL at its own expense either to repair, make safe and restore one or any of those works, or any relevant part of them, or to	The MMO advises this condition is updated to say the undertaker must ensure they also obtain the necessary consents.	This wording is well precedented and commonly included in DCOs. Failure to obtain any necessary consents would be dealt with under the relevant consenting regime, and therefore inclusion of a requirement in this article to obtain necessary consents would be superfluous. No change to the **Draft DCO** [APP-027] is proposed.	The MMO does not agree that '*well precedented and commonly included in DCOs'* provides enough justification for not updating the definition. The MMO notes that previous DCOs may have similar definitions however the MMO believes this should be updated to the following wording (and similar updates to sub-limb (2)):	The Applicants note that the only difference between the wording in the **Draft DCO (Revision 9)** [document reference 3.1] requirement 43 and the wording suggested by the MMO is that the existing wording states "…by notice in writing require…" and the MMO's preferred wording states "…issue a written notice requiring…". The

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
		remove them and, without prejudice to any notice served under section 105(2) of the 2004 Act, restore the site to a safe and proper to such an extent and within such limits as may be specified in the notice. (2) Where the DBS West Project offshore works or any part of them are abandoned or allowed to fall into decay the Secretary of State may, following consultation with DBSWL, by notice in writing require DBSWL at its own expense either to repair, make safe and restore one or any of those works, or any relevant part of them, or to remove them and, without prejudice to any notice served under section 105(2) of the 2004 Act, restore the site to a safe and proper condition, to such an extent and within such limits as may be specified in the notice.		The Applicants do not believe that the amendment suggested by the MMO changes the substance of the drafting such that it is necessary to include it and do not propose to update the Draft DCO (Revision 7) [document reference 3.1].	*Where the DBS East Project offshore works or any part of them are abandoned or allowed to fall into decay the Secretary of State may, following consultation with DBSEL issue a written notice requiring DBSEL at its own expense either to repair, make safe and restore one or any of those works, or any relevant part of them, or to remove them and, without prejudice to any notice served under section 105(2) (requirement to prepare decommissioning programmes) of the 2004 Act, restore the site to a safe and proper condition, to such an extent and within such limits as may be specified in the notice.*	Applicants submit that the MMO's preferred wording does not change the substance or effect of this article and so do not propose to make the requested amendment.
25	Part 2 Approval of matters specified in requirements Further Information	Further information 3.— (1) In relation to any application referred to in paragraph 2, the discharging authority may request such further information from the undertaker as it considers necessary to enable it to consider the application. (2) If the discharging authority considers that further information is necessary, and the requirement concerned contained in Part 1 of this Schedule does not specify that consultation with a consultee is required, the discharging authority must, within ten days of receipt of the application, notify the undertaker in writing specifying the further information	3.11.1 The MMO has provided detailed comments in Table 1 below. Please find a summary of the main concerns below. Determination dates: The MMO strongly considers that it is inappropriate to put timeframes on complex technical decisions of this nature. The time it takes the MMO to make such determinations depends on the quality of the application made, the complexity of the issues and the amount of consultation the MMO is required to undertake with other organisations to seek resolutions.	3.11.1 The Applicants have responded to the MMO's detailed comments in Table 1 below and 3.11.3 The Applicants require certainty that the discharge of conditions under the DMLs will not cause undue delay to the delivery of the Projects. The Applicants note that, whilst the MMO is not subject to set determination periods for the discharge of conditions for marine licenses issued by the MMO, the MMO does aim to make a decision on most marine licence applications within 13 weeks of an application being validated. It would therefore seem reasonable that the MMO is able to make a decision on the discharge of conditions within a period double that length. The Applicants therefore submit that six months is a reasonable amount of time for the MMO to determine any approvals sought, noting that the provisions of the DMLs (condition 8 on DML	The MMO notes that this is in relation to Part 2 of Schedule 2 where the MMO is not the discharging authority. However, this is relevant in relation to Condition 15(5) and maintains their position that a determination date should not be included. The MMO welcomes that documents will be submitted six months before the intended commencement of licensed activities.	The Applicants welcome the MMO's agreement in relation to the six month submission timeframe for approvals. The Applicants have queried the concern in relation to condition 15(5) with the MMO as that condition does not contain reference to determination periods. The MMO have confirmed by email on 12th June 2025 that they do not have a concern in relation to this and will confirm this at Deadline 6. The Applicants therefore consider that this issue is resolved.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
		required. (3) If the requirement concerned contained in Part 1 of this Schedule specifies that consultation with a consultee is required, the discharging authority must issue the application to the consultee within five working days of receipt of the application and notify the undertaker in writing specifying any further information requested by the consultee within five working days of receipt of such a request. (4) If the discharging authority does not give the notification within the period specified in subparagraphs (2) or (3) it (and the consultee, as the case may be) is deemed to have sufficient information to consider the application and is not entitled to request further information without the prior agreement of the undertaker.	3.11.3 The MMO's position remains that it is inappropriate to apply a strict timeframe to the approvals the MMO is required to give under the conditions of the DML, given this would create disparity between licenses issued under the DCO process and those issued directly by the MMO, as marine licenses issued by the MMO is not subject to set determination periods. This applies for the following conditions: • Extension of time Periods (condition 8 on DML 1 and 2, condition 6 on DML 3 and 4 and condition 4 on DML} • Pre-construction plans and documentation (condition 15 on DML 1 and 2, condition 13 on DML 3 and 4 and • condition 11 on DML 5) • Site integrity plans (condition 16 on DML 1 and 2 and condition 14 on DML 3 and 4) 3.11.4 Whilst the MMO acknowledges that the Applicant may wish to create some certainty around when it can expect the MMO to determine any applications for an approval required under the conditions of a licence, and whilst the MMO acknowledges that delays can be problematic for developers and that they can have financial implications, the MMO stresses that it does not delay determining whether to grant or refuse such approvals unnecessarily. The MMO makes	1 and 2, condition 6 on DML 3 and 4 and condition 4 on DML 5) do allow for an alternative timeframe to be agreed between the MMO and the undertaker, which could be utilised in the unlikely event that six months was not sufficient in individual cases. 3.11.4 The Applicants welcome the MMO's confirmation that it does not delay determining whether to grant or refuse such approvals unnecessarily. This supports the Applicants' position that six months should be a sufficient amount of time for such approvals to be considered, noting that an alternative timeframe can be agreed in the unlikely event that six months was not sufficient in individual cases. 3.11.2, 3.11.5 and 3.11.6 The Applicants' position is that the submission of certain plans for approval at least four months prior to commencement of operation of licensed activities is appropriate and precedented (for example Hornsea Four and East Anglia One North OWFs). Notwithstanding that, the Applicants welcome that the MMO is open to discussion on this point and will therefore seek to agree the relevant timescales with the MMO and update the Examining Authority (ExA) once those discussions have taken place The Applicants maintain the position previously set out in response to this point (as contained in the column entitled "Applicant Comments" in this row 25), noting also that the Draft DCO (Revision 7) [document reference 3.1] has been previously updated so that documents will be submitted 6 months in advance, rather than the original 4 months.		

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
			these determinations in as timely a manner as it is able to do so. 3.11.5 The MMO's view is that it is for the developer to ensure that it applies for any such approval (with all information required) in sufficient time as to allow MMO to properly determine whether to grant or refuse the application. The MMO believes that if time scales are included within the DML for plans, then these should be 6 months and not 4 months. 3.11.6 However, without prejudice to this position, the MMO is open to discussions on which documents should be 6 months, and which documents could be 4 months, in order to take into account the concerns that the Applicant may have			
Schedule 10 Schedule 14 – Deemed Marine Licences						
Part 1						
31	Part 1 Licensed marine activities Interpretation DML1 - DML5	"authorised deposits" means the substances and articles specified in paragraph 4 of Part 1 of this marine licence;	The MMO requests this is updated to clarify that the materials need approval by the MMO in order to be deposited.	The Applicants acknowledge the MMO's comments. The Applicants will update paragraph 4 of Part 1 of the DMLs with the relevant reference numbers for the disposal sites once these are available.	The MMO welcome the Applicant's updates. It is for the MMO to designate the disposal sites in conjunction with our scientific advisors Centre for Environment Fisheries and Aquaculture Science (Cefas). The MMO has received shape files from the Applicants and will work on designating these and provide the reference numbers to be included in Paragraph 4 and Condition 13 (5) as soon as possible.	The Applicants welcome the MMO's comments on this and await further update.
32	Part 1 Licensed marine activities	"cable protection" means measures to protect cables forming part of the authorised scheme from physical damage	The MMO requests the condition wording is updated to the below to ensure that the reason why	This wording is well precedented, and commonly included in DCOs. It is considered that the additional wording proposed by the MMO is not appropriate or necessary for the	The MMO is on this occasion content with the Applicant's wording and has no further comments on this matter.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
	Interpretation DML1 - DML 5	and exposure due to loss of seabed sediment including, but not limited to, rock placement, concrete mattresses with or without frond devices, protective aprons or coverings, bagged solutions filled with sand, rock, grout or other materials and protective shells;	cable protection is being used is clear. "cable protection" means measures for offshore cable crossings and where cable burial is not possible due to ground conditions or approaching offshore structures, to protect cables forming part of the authorised scheme from physical damage and exposure due to loss of seabed sediment including, but not limited to, rock placement, concrete mattresses with or without frond devices, protective aprons or coverings, bagged solutions filled with sand, rock, grout or other materials and protective shells;"	purposes of defining the meaning of "cable protection". No change to the Draft DCO [APP-027] is proposed. The definition of "cable crossing" includes "physical protection measures including cable protection" and therefore it would not work to also include "cable crossing" in the definition of "cable protection". No updates to the Draft DCO (Revision 7) [document reference 3.1] are therefore proposed.		
33	Part 1 Licensed marine activities Interpretation DML1 - DML5	"intrusive activities" means activities including anchoring of vessels, jacking up of vessels, temporary deposits and temporary wet storage areas;	The MMO would like to remind the Applicant that temporary deposits are still licensable. The Applicant should not undertake temporary deposits that are not licensed under a DML. The MMO request the phrase 'temporary deposit' is removed from this definition within the DMLs. Can the Applicant confirm where this has been assessed within the ES?	The Applicants would welcome a discussion with the MMO regarding the scope of "temporary deposits" before committing to making this change. The use of the wording "temporary deposits" has been previously removed from the Draft DCO (Revision 7) [document reference 3.1] and so the Applicants consider that this matter is now resolved.	The MMO welcome the Applicant's updates and have no further comments.	The Applicants welcome the MMO's agreement on this matter.
36	Part 1 Licensed marine activities Interpretation DML1 - DML 5	"MHWS" or "mean high water springs" means the highest level that spring tides reach on average over a period of time;	The MMO request the definition is updated to: 'The height of Mean High Water Springs (MHWS) is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest (Spring tides).	This wording is well precedented, and commonly included in DCOs. No change to the **Draft DCO** [APP-027] is proposed.	Please see row 6 for more information.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
39	Part 1 Licensed marine activities Interpretation DML1 - DML 5	"undertaker" means DBSEL and DBSWL;	The MMO request this is updated. Only one company can own the marine licence and be the undertaker. Please also include the company name and registration number.	Company details are provided in the definition of DBSEL and DBSWL. Marine Licence 5 relates to cabling inter-linking the two Projects and would be owned jointly by DBSEL and DBSWL. A separate DML has been included in order to allow for the transfer of these transmission assets to an Offshore Transmission Owner in due course. The Applicants are not aware of any legal restriction preventing a DML being granted to joint undertakers. No change to the **Draft DCO** [APP-027] is proposed.	The MMO discussed this with the Applicant on 13/05 and understand that another DML to separate the companies will be included at a later deadline to ensure all other comments on the DML are taking into account for ease. The MMO is content with this approach and will provide confirmation at the final deadline.	The Applicants welcome the MMO's agreement on the suggested approach.
47	Drill arisings	DML 1 – Schedule 10 – Works No. 7a (f) DML 2 - Schedule 11 - Works No. 7b (f) DML 3 – Schedule 12 – Works No 7a (f) DML 4 – Schedule 13 – Works No 7b (f)	Chapter 5 section 5.5.3.2.1 table 5-7 states maximum drill arisings per foundation and maximum volume of arisings differ to what is detailed within each DML: ES: Maximum drill arisings per foundation (m3) – small turbines 2,012. Large turbines 4,712 Maximum volume of arisings (m3) – Small turbines 20,106. Large Turbines 26,625 DML 1: 37,917 DML 2: 35,086 DML 3: 2,815 DML 4: 2,815 Please ensure consistency across all documentation. In addition, it needs to be clear within the DMLs if the maximum parameters are across all DMLs. The maximum parameters should be conditioned to ensure the works are within the parameters assessed in the ES.	The Applicants note that the numbers presented are correct and as intended. The reasoning for the apparent inconsistencies relates to the optionality retained within the Projects relating to different types of foundations that could be used and how arisings are grouped for different purposes within the Draft DCO [APP-027] and DMLs. For example, there are figures presented in Tables 5-7 and 5-9 of Chapter 5 Project Description [APP-071) which are different because Table 5.7 relates to arisings generated by turbine monopile foundations only, whilst Table 5-9 relates to arisings generated by turbine jacket foundations only. Each type of foundation could create a different volume of arisings as a worst case, hence different numbers are presented. Within the Draft DCO [APP-027] the numbers relating to arisings presented in Schedule 1 Part 1 are for each project taken separately and include both the worst case or turbine foundation arisings combined with the worst case foundation arisings, plus the worst case foundation arisings from the platforms associated. The numbers relating to drill arisings presented within each DML relate to the worst case	The MMO welcomes the Applicant's comments and has nothing further to add on the matter.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
				arising calculations associated with the infrastructure included within the given licence. For example, DML 1 covers the worst case values for drill arisings from all turbines, plus the worst case values for drill arisings from the platforms included within that licence		
Part 2						
48	Design Parameters	DML 1: Condition 1 - Condition 5 DML 2: Condition 1 – Condition 5 DML 3: Condition 1 – Condition 3 DML 4: Condition 1 – Condition 3	The MMO requests the wording of these conditions are updated to ensure they are enforceable by changing 'may' to 'will' or by stating 'must not be higher' etc. for all conditions.	The Applicants acknowledge this comment and will make appropriate updates to the **Draft DCO** [APP-027] to address the point raised by the MMO and submit an updated **Draft DCO** [APP-027] for Deadline 1.	The MMO welcome the Applicant's updates however resolved 2 (3) still states "will" and not "must not" this needs to be amended prior to the MMO considering this matter.	The Applicants have made the requested amendment in the **Draft DCO (Revision 9)** [document reference 3.1] and thank the MMO for highlighting this previous omission.
51	Phases of the authorised Scheme	DML 1: Condition 6 DML 2: Condition 6 DML 3: Condition 4 DML 4: Condition 4 DML 5: Condition 2	The MMO requests the wording is updated to: '(1) The authorised scheme must not commence until a written scheme setting out the phases of construction of the authorised scheme has been submitted to and approved in writing by the MMO. (2) The authorised scheme must be submitted at least 6 months prior to the proposed commencement of the works. (3) Any subsequent amendments to the written scheme submitted for approval under sub-paragraph (1) must be submitted to the MMO for approval in writing'. (4) The written scheme submitted for approval under sub-paragraph (1) must be implemented as approved. The approved details shall be taken to include any amendment that may subsequently be approved by the MMO in accordance with sub-paragraph (2).	The principle of a time period for submission of the written scheme is acceptable to the Applicants. However, the Applicants propose a four month time period is included in the new sub-paragraph (2).The Applicants will update the Draft DCO [APP-027] on this basis. The Applicants will also update the Draft DCO [APP-027] to refer to this scheme as the "Offshore Works Phasing Scheme" and submit an updated Draft DCO [APP-027] at Deadline 1.	The MMO welcomes the Applicant's updates but still believes 6 months is appropriate. Please see row 25	The Applicants have previously amended this time period to six months and so would hope that this matter is now resolved.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
			In addition, the MMO note that the Offshore Works Phasing Scheme will be submitted under the related return for this condition at the post-consent stage. This document should be clearly named in the condition.			
53	Extension of Time periods	DML 1: Condition 8 DML 2: Condition 8 DML 3: Condition 6 DML 4: Condition 6 DML 5: Condition 4	The MMO requests this condition is removed from all the DMLs. Please see comments under 3.11.2-3.11.6 determination dates.	Please see response above. This condition is precedented, for example within the Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024, and the Hornsea Four Offshore Wind Farm Order 2023. No change to the Draft DCO [APP-027] is proposed. The Applicants note that the MMO previously responded to confirm that it was content on the condition remaining but requested a minor amendment to ensure any agreement is "in writing". The Applicants previously updated this wording in the relevant conditions and hope that this matter is now resolved.	The MMO welcomes the Applicant's updates and has no further comments.	The Applicants welcome the MMO's agreement on this matter.
55	Notifications and Inspections	DML 1: Condition 9 (1) (b) DML 2: Condition 9 (1) (b) DML 3: Condition 7 (1) (b) DML 4: Condition 7 (1) (b) DML 5: Condition 5 (1) (b)	The MMO request this section of the condition is removed. It is the undertaker's responsibility to notify the MMO. This is reflected in the updated Condition (1) (a) wording provided above.	This condition is well precedented, and commonly included in DCOs. No change to the **Draft DCO** [APP-027] is proposed. The Applicants note that amendments have been made to the relevant conditions previously in order to seek to address the MMO's concerns and hope that this matter is now resolved.	The MMO welcomes the Applicant's updates and has no further comments.	The Applicants welcome the MMO's agreement on this matter.
56		DML 1: Condition 9 (6) DML 2: Condition 9 (6) DML 3: Condition 7 (6) DML 4: Condition 7 (6) DML 5: Condition 5 (6)	The MMO should be notified upon commencement and completion of any part of the licensed activities, particularly when works are being undertaken in phases. The MMO requests the condition is updated to: (6) The undertaker must inform the MMO Local Office in writing at least 14 days prior to the	The **Draft DCO** [APP-027] provides for five days prior notice of commencement of licensed activities, rather than the 14 days requested by the MMO. Five days' notice is well precedented, and no change to the **Draft DCO** [APP-027] is proposed.	The MMO has requested that this notification is 14 days to allow enough time for the MMO local office to prepare for any compliance inspections. Anything shorter would not allow the team enough time to review the entire DM/.	The Applicants previously updated the **Draft DCO (Revision 9)** [document reference 3.1] to include a 14 day notification period to the MMO Local Office within condition 9(6), which the MMO had confirmed was their main concern with this condition at a meeting on 13th June 2025. The Applicants therefore hope that this matter is now resolved.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
			commencement of the licensed activities or any part of them including providing a programme of works for future activities and within five days of the completion of the licensed activities or any part of them.		The MMO does not agree with the five-day time period and require the 14 as requested. The MMO discussed this with the Applicants on 13 May and will continue to engage in this matter.	
58		DML 1: Condition 9 (8) DML 2: Condition 9 (8) DML 3: Condition 7 (8) DML 4: Condition 7 (8) DML 5: Condition 5 (8)	The MMO notes that the notice to mariners are only for works numbers 1A to 8A and 1B to 8B. Can the Applicant confirm why this is not for the other works undertaken under each DML?	This condition is well precedented, and commonly included in DCOs. The condition requires notification prior to the commencement of the authorised scheme or any part thereof. No change to the **Draft DCO** [APP-027] is proposed.	On this occasion the MMO is content to agree with the condition.	The Applicants welcome the MMO's agreement on this matter.
59		DML 1: Condition 9 (9) DML 2: Condition 9 (9) DML 3: Condition 7 (9) DML 4: Condition 7 (9) DML 5: Condition 5 (9)	The MMO requests the words '(unless otherwise agreed)' is removed from this condition.	This condition is precedented within the Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024. The Applicants consider this flexibility is helpful to allow the option for the Applicants and the MMO to agree weekly notifications are not required in certain circumstances, such as during period of the construction period when the on-going construction activities are not changing from week to week. This wording requires agreement with the MMO, and therefore the default position is that the undertaker will be required to provide weekly, unless the MMO is satisfied it is unnecessary. No change to the **Draft DCO** [APP-027] is proposed. The Applicants have previously made the amendments suggested at Deadline 2 by the MMO and hope that this matter is now resolved.	On this occasion the MMO is content with the condition and welcomes the updates to date.	The Applicants welcome the MMO's agreement on this matter.
60		DML 1: Condition 9 (10) DML 2: Condition 9 (10) DML 3: Condition 7 (10)	This condition states the undertaker must notify the UK Hydrographic Office (UKHO) of the progress of construction. The Applicant should clarify the	This condition is well precedented, and commonly included in DCOs. No change to the **Draft DCO** [APP-027] is proposed.	The MMO welcomes the Applicant's updates and has no further comments.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
		DML 4: Condition 7 (10) DML 5: Condition 5 (10)	reporting timeframe and what progress (stages) will require a notification. If this is agreed in a plan, this plan should be referenced and the condition the plan will be approved under. The MMO is reviewing is content with this remaining as the MMO believes that the progress will include weekly updates. The MMO requests that the condition is updated to change fourteen days to ten days to ensure the information is as up to date as possible. This has been agreed with MCA			
62		DML 1: Condition 9 (13) DML 2: Condition 9 (13) DML 3: Condition 7 (13) DML 4: Condition 7 (13) DML 5: Condition 5 (13) 'The undertaker must notify the MMO in writing a minimum of 5 days in advance of the commencement of each discrete incident of cable repair, replacement, or protection replenishment activity.	The MMO requests this is updated to "at least 14 days prior to the commencement'… In addition the condition should clearly define repair, replacement, and protection replacement. This should be defined under maintain and linked to the Outline Offshore Operations and Maintenance Plan (OOOMP) or those assessed in the Environmental Statement. We consider that these works should be restricted to those that have been assessed and consented and the definition should clearly demonstrate this.	The **Draft DCO** [APP-027) provides for five days prior notice of commencement of cable repair, replacement, or protection replenishment activity, rather than the 14 days requested by the **MMO**. Five days' notice is precedented within the Hornsea Four Offshore Wind Farm Order. No change to the **Draft DCO** [APP-027] is proposed.	The MMO has requested that this notification is 14 days to allow enough time for the MMO local office to prepare for any compliance inspections. Anything shorter would not allow the team enough time to review the entire DML. The MMO has requested that this notification is 14 days to allow enough time for the MMO local office to prepare for any compliance inspections. Anything shorter would not allow the team enough time to review the entire DML.	The Applicants note that condition 9(13) does not include for notification to the MMO Local Office and had understood that the MMO's concern in this regard related to condition 9(6), which has been amended previously. The Applicants therefore hope that this matter is now resolved but would welcome the MMO's confirmation of this.
63	Colouring of Structures	DML 1: Condition 11 DML 2: Condition 11 DML 3: Condition 9 DML 4: Condition 9	The MMO recommend the wording is updated to: 'The undertaker must paint all structures forming part of the authorised scheme yellow (colour code RAL 1023) from at least HAT to the height agreed in writing with Trinity House. The undertaker must paint the remainder of the	The Applicants acknowledge this comment and will make appropriate updates to the draft DCO to address the point raised by the MMO and submit an updated Draft DCO [APP-027] for Deadline 1. The Applicants have updated the Draft DCO (Revision 7) [document reference 3.1] with the wording that has been agreed between the	The MMO welcome the Applicant's updates to this condition which was agreed with Trinity House and has no further comments to make.	The Applicants welcome the MMO's agreement on this matter.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
			structures grey (colour code RAL 7035). Requests to change the colouring of the structure must be submitted to the MMO in writing and must not be undertaken unless approved in writing by the MMO'.	MMO and Trinity House and so hope that this matter is now resolved		
64	Aviation Safety	DML 1: Condition 12 DML 2: Condition 12 DML 3: Condition 10 DML 4: Condition 10 DML 5: Condition 8	The MMO requests this condition is removed and included in the DCO as the Defence Infrastructure Organisation Safeguarding and Civil Aviation Authority can review this through the DCO requirements.	This condition is well precedented, and commonly included in DCOs. No change to the **Draft DCO** [APP-027] is proposed.	The MMO generally prefer this condition to be removed as it relates to different legislation and is usually covered within the DML however on this occasion the MMO are content to leave it in.	The Applicants welcome the MMO's agreement on this matter.
65	Chemicals, drilling and debris	DML 1: Condition 13 (1) DML 2: Condition 13 (1) DML 3: Condition 11 (1) DML 4: Condition 11 (1) DML 5: Condition 9 (1) 'Unless otherwise agreed in writing by the MMO, the carriage and use of chemicals in the construction of the authorised scheme must comply with the International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997."	The MMO note the International Convention for the Prevention of Pollution from Ships 1973 does not apply to chemicals used by the offshore wind industry. The MMO are discussing this further internally and will provide further comments in due course.	The Applicants note that the MMO is considering this further. The Applicants are considering the wording suggested by the MMO and plan to discuss it with the MMO at an upcoming meeting that has been arranged for 13th May 2025, as the Applicants have a query on the proposed wording for the MMO to clarify. The Applicants will provide a further update after the meeting has taken place.	The MMO and the Applicant had a meeting on 13 May to discuss this matter in more detail including the background and 10 week submission timeline requirement and will continue to discuss this to try to come to an agreement.	The Applicants have previously (at Deadline 5) added the requested condition wording relating to chemicals to the DMLs within the **Draft DCO (Revision 9)** [document reference 3.1]. That wording includes reference to the ten week submission timeframe. The Applicants would therefore hope that this issue is resolved.
66		DML 1: Condition 13 (2) DML 2: Condition 13 (2) DML 3: Condition 11 (2) DML 4: Condition 11 (2) DML 5: Condition 9 (2) 'The undertaker must ensure that any coatings and treatments are suitable for use in the marine environment and are used in	The final design of the frond mattresses will be detailed in the offshore construction method statement that will be submitted to and approved by the MMO prior to commencement of development. It should also be noted that any paints coatings and chemicals with a pathway to the marine environment should be approved by the MMO prior to	The Applicants note that it is stated in the **Outline PEMP** [APP-245] that all chemicals used (including paints) would be certified for use in the marine environment (unless otherwise agreed with the MMO) to ensure that there would be no risk anticipated to arise from normal operations of the Projects. The Applicants submit that the control afforded to the MMO for the use of any chemicals (including paints) not certified for use in the marine environment through the **Outline**	The MMO provided comments in section 1.4 of REP3-045. The MMO and the Applicant had a meeting on 13 May to discuss this matter in more detail including the background and 10 week submission timeline requirement and will continue to discuss this to try to come to an agreement.	The Applicants have previously (at Deadline 5) added the requested condition wording relating to chemicals to the DMLs within the **Draft DCO (Revision 9)** [document reference 3.1]. That wording includes reference to the ten week submission timeframe. The Applicants would therefore hope that this issue is resolved.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
		accordance with guidelines approved by the Health and Safety Executive and the Environment Agency Pollution Prevention Control Guidelines.'	use. Part 2 section 7 also allows the undertaker at any time to maintain the authorised scheme at (c) allows for "Painting and applying other coatings to wind turbine generators or offshore accommodation platforms", as these may also contain plastics. Coatings and paints under OSPAR guidance should have their properties known and therefore should be notified to the MMO for approval prior to use. Therefore, the condition 13 (2) wording should be amended to reflect OSPAR guidance.	**PEMP** [APP-245] and any final PEMPs is sufficient. As such no change to the **Draft DCO** [APP-027] is proposed. The PEMPs will cover both the construction and operational phases of the Projects The Applicants are considering the wording suggested by the MMO and plan to discuss it with the MMO at an upcoming meeting that has been arranged for 13th May 2025, as the Applicants have a query on the proposed wording for the MMO to clarify. The Applicants will provide a further update after the meeting has taken place.		
68		DML 1: Condition 13 (5) DML 2: Condition 13 (5) DML 3: Condition 11 (5) DML 4: Condition 11 (5) DML 5: Condition 9 (5) 'The undertaker must ensure that only inert material of natural origin, produced during the drilling installation of or seabed preparation for foundations, and drilling mud is disposed of within the Order limits seaward of MHWS'.	The Applicant should state the name of the disposal site that the material will be deposited in. The MMO is working to designate the disposal sites and will provide an update in due course. See further comments about disposal sites in section 3.14. In the event that no activity has taken place during the reporting period the undertaker must provide a null (0) return to the MMO.	The Applicants acknowledge this comment and will make appropriate updates to the **Draft DCO** [APP-027] to address the point raised by the MMO and submit an updated **Draft DCO** [APP-027] for Deadline 1. The Applicants acknowledge the MMO's comments. The Applicants will update paragraph 4 of Part 1 of the DMLs with the relevant reference numbers for the disposal sites once these are available.	The MMO has received the shape file of each disposal site and is proceeding to designate disposal sites once the changes have been made as detailed in REP4 we will provide these to the Applicant to be updated.	The Applicants await a further update from the MMO on this.
39	Force Majeure	DML 1: Condition 14 DML 2: Condition 14 DML 3: Condition 12 DML 4: Condition 12 DML 5: Condition 10	The MMO request that "Force Majeure" conditions are removed from the DML. The MMO does not consider provisions on Force Majeure to be necessary as Section 86 MCAA 2009 provides a defence for action taken in an emergency in breach of any licence conditions. The defence under Section 86 of MCAA has two limbs, and in the event that	This condition is well precedented, and commonly included in DCOs. The Applicants do not agree that this wording is not necessary. Section 86 provides a defence for actions taken in an emergency, whereas this condition is about notifying the MMO of a deposit made in those circumstances. It does not overlap with Section 86, which will still apply.	The MMO notes this is likely to be not agreed by the end of Examination. The MMO's position is detailed in REP2-061 Section 1.3	The Applicants agree that this matter is unlikely to be agreed before the end of Examination and maintain the position set out in previous submissions.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
			the undertaker fails to notify the appropriate licensing authority, in this case the MMO, within a reasonable time of their actions (Section 86(2) "matters") the defence cannot be relied upon in the event of any enforcement action.	No change to the **Draft DCO** [APP-027] is proposed.		
77	Pre-construction plans and documentation	DML 1: Condition 15 (3) DML 2: Condition 15 (3) DML 3: Condition 13 (3) DML 4: Condition 13 (3) DML 5: Condition 11 (3) 'Any sediment removed from within the Dogger Bank Special Area of Conservation during construction of the authorised scheme must be disposed of within that part of the Dogger Bank Special Area of Conservation which falls within the Order limits'.	The MMO is concerned that the Applicant could dispose of material on non-sand bank habitats within the SAC. The MMO requests the condition is updated to state that dredged is disposed on the same material type. This is to prevent dredged material being deposited on sensitive habitats. 'Any sediment removed from within the Dogger Bank Special Area of Conservation during construction of the authorised scheme must be disposed of within that part of the Dogger Bank Special Area of Conservation which falls within the Order limits. Material to be disposed must be placed on the same material type'. This is so that all requirements regarding the location of the material to be disposed is clearly written within the same condition. The disposal site must also be named within the condition. The MMO recommend a disposal site is designated for the disposal within the SAC to clearly signpost the area. The MMO is working to designate the disposal sites and will provide an update in due course	As a variety of sediment types are present on the Dagger Bank, the Applicants believe that stipulating material to be disposed must be placed on the same material type cannot be guaranteed and would be difficult and onerous to apply in reality. Dredging, particularly for the linear aspects of the Projects such as the subsea cable installations, may occur over a variety of sediment types to allow installation to occur. The resultant mixed cargo could not be disposed of on any single, specific material type. Hence, compliance with such a condition would require the dredge, transit and deposition of very high numbers of potentially very limited cargoes of specific sediment types for specific disposal on patches of that same sediment type. The dredge, transit and disposal and the 'stop-start' nature of dredging mean that this would be highly time consuming and inefficient. Given the practical difficulties associated with this request, the Applicants do not agree that this should be added as conditions of the DMLs.	Please see row 68 above for more information regarding dredging and disposal. The MMO is reviewing this condition and is working on designating the disposal sites and will provide more information in Deadline 6	The Applicants await a further update from the MMO on this.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
79		DML 1: Condition 15 (5) DML 2: Condition 15 (5) DML 3: Condition 13 (5) DML 4: Condition 13 (5) DML 5: Condition 11 (5) The MMO must determine an application for approval made under condition 11 within a period of six months commencing on the date the application is received by the MMO, unless otherwise agreed in writing with the undertaker.	The MMO requests this is removed. It is not appropriate for the determination times to be conditioned. The MMO set their own timescales, and this is dependent upon the quality of the submission and the availability of primary advisors, see comments 3.11.2-3.11.6 for determination dates. In addition, the Applicant has referenced the wrong condition within the text.	The Applicants have responded to the MMO's detailed comments in Table 1 below and 3.11.3 The Applicants require certainty that the discharge of conditions under the DMLs will not cause undue delay to the delivery of the Projects. The Applicants note that, whilst the MMO is not subject to set determination periods for the discharge of conditions for marine licenses issued by the MMO, the MMO does aim to make a decision on most marine licence applications within 13 weeks of an application being validated. It would therefore seem reasonable that the MMO is able to make a decision on the discharge of conditions within a period double that length. The Applicants therefore submit that six months is a reasonable amount of time for the MMO to determine any approvals sought, noting that the provisions of the DMLs (condition 8 on DML 1 and 2, condition 6 on DML 3 and 4 and condition 4 on DML 5) do allow for an alternative timeframe to be agreed between the MMO and the undertaker, which could be utilised in the unlikely event that six months was not sufficient in individual cases. 3.11.4 The Applicants welcome the MMO's confirmation that it does not delay determining whether to grant or refuse such approvals unnecessarily. This supports the Applicants' position that six months should be a sufficient amount of time for such approvals to be considered, noting that an alternative timeframe can be agreed in the unlikely event that six months was not sufficient in individual cases. 3.11.2, 3.11.5 and 3.11.6 The Applicants' position is that the submission of certain plans for approval at least four months prior to commencement of operation of licensed activities is appropriate and precedented (for example Hornsea Four and East Anglia One North OWFs).	Please see comments in row 25 above.	Please see response in row 25 above.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
				Notwithstanding that, the Applicants welcome that the MMO is open to discussion on this point and will therefore seek to agree the relevant timescales with the MMO and update the Examining Authority (ExA) once those discussions have taken place. The Applicants will amend cross-references within this sub-paragraph and submit an updated version of the **Draft DCO** [APP-027] at Deadline 1.		
82		DML 1: Condition 17 DML 2: Condition 17 DML 3: Condition 15 DML 4: Condition 15	The MMO requests that the condition 16 (DML1) and condition 17 (DML1) are combined, and this update is also reflected within the other DMLs listed. The MMO also request that condition 17 (2) for DML 1 and 2 and 15 (2) for DML 3 and 4 is removed as this is not appropriate to be in a condition. The MMO set their own timescales. See comments 3.11.2-3.11.6 for determination dates.	The Applicants' preference is not to combine these two conditions, as changes to condition numbering would have an impact on cross-references to DML conditions in a number of other application documents. In relation to sub-paragraph (2), please see response to RR- 030=3·11 above. No change to the **Draft DCO** [APP-027] is proposed.	Please see comments in row 25 above.	Please see response in row 25 above.
89	Construction monitoring and surveys	DML 1: Condition 21 (4) DML 2: Condition 21 (4) DML 3: Condition 19 (4) DML 4: Condition 19 (4)	The MMO will keep a watching brief on this condition as there are ongoing internal discussions.	The Applicants acknowledge the MMO's response.	The MMO discussed this point further with the Applicant on 13 May 2025 and advised that there was no update with the SNCBs. The MMO requested if it could not be updated within the condition on this occasion the MMO could accept a commitment to discuss the monitoring requirements post consent – specifically which piles to monitor once the design is finalised. The MMO would also add if noise reduction measures are used further monitoring may be required and this will be discussed through the IPMP.	The Applicants discussed this point with the MMO at a meeting on 13th May 2025. At that meeting the MMO confirmed that they would be content that this monitoring was agreed post-consent and the Applicants agreed to update the **Commitments Register (Revision 2)** [REP2-025] (which will be re-submitted at Deadline 7) to add a commitment to having these future discussions.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
90		New subsection: DML 1: Condition 21 (8) DML 2: Condition 21 (8) DML 3: Condition 19 (8) DML 4: Condition 19 (8) DML 5: Condition 15 (5)	The MMO requests that a provision for adaptive management is included within this condition. The MMO is requesting this to implement a more proactive process to manage issues, in the event that post construction monitoring shows a greater impact than that assessed in the Environmental Statement. The MMO is currently experiencing this on Round 1 and 2 offshore wind farms. The additional conditions ensure that all parties are clear what is required if the monitoring shows higher impacts than predicted during the assessment stage. It also allows the Applicant themselves to provide potential solutions when reviewing the results of monitoring, to then be discussed with the MMO and SNCBs. The aim of the condition is to provide a clear process to the Applicant, the MMO and any consultees if, in preparing the monitoring reports, the Applicant identifies greater impact that the Environmental Statement (ES) predicted rather than a report being submitted and then a discussion having to take place upon review/consultation of the reports. The MMO notes that if impacts are higher than predicted, the MMO can utilise Section 72 of 2009 Act and vary the marine licence to request Adaptive Management but believes the	The Applicants would request that the MMO provide further detail on this point, in order to allow consideration of drafting. The need for further monitoring and actions is reflected in section 1.4 of the In Principle Monitoring Plan (Revision 3) [document reference 8.23] which states (paragraph 17): "The scope and design of all monitoring work should be finalised and agreed following review of the results of any preceding survey and / or monitoring work (i.e. an adaptive monitoring approach), including those surveys conducted in support of the EIA. This includes the potential for survey requirements to be adapted based on the results of the monitoring outlined in this document, including in the event that unforeseen effects arise, which may in turn give rise to the need for adaptive management measures to be considered. Where it has been agreed that there are no significant effects, monitoring need not be conditioned through the DMLs." The Applicants maintain that there is no need for any further provision in the Draft DCO (Revision 7) [document reference 3.1] in this regard.	The MMO position is always that the condition sets out a process for adaptive management as a standalone condition. Further discussions with the Applicant on 13 May 2025 led to a potential agreement with the IPMP being updated further with a process of what should be provided if adaptive management is required. This is an ongoing area of discussion.	The updated **In Principle Monitoring Plan (Revision 4**) [REP5-027] was submitted at Deadline 5 and the Applicants await the MMO's comments and confirmation of whether the updates alleviate their concerns in this regard.

ID	Main DCO		MMO Comments	Applicants' Comments	MMO's Deadline 5 Comments	Applicants' Comments
			addition of this condition gives a clear process to all and allows for proactive management by the Applicant, rather than reactive management by the MMO.			
94		New subsection DML 1: Condition 22 (6) DML 2: Condition 22 (6) DML 3: Condition 20 (6) DML 4: Condition 20 (6) DML 5: Condition 16 (6)	The MMO requests that a provision for adaptive management is included within this condition	The Applicants would request that the MMO provide further detail on this point, in order to allow consideration of drafting.	Please see comments above in line 90.	Please see response above in row 90.

2.4 National Grid Electricity Transmission Plc (NGET)

Table 2-5 – The Applicants' response to NGET's Deadline 5 Document [REP5-064]

I.D.	NGET Response	Applicants' Response
REP5-064:1	**1 Introduction** 1.1 This submission is made at Deadline 4 on behalf of National Grid Electricity Transmission plc (**NGET**) in connection with the application by RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited (**Promoter**) for the Dogger Bank South Offshore Wind Farms Development Consent Order (**Order**) to enable the construction of the Dogger Bank South Offshore Wind Farm (**Dogger Bank South Project**). 1.2 It provides an update on the matters referred to in NGET's written representation dated 29 January 2025 (**NGET's Written Representation) [REP1-080]** and NGET's submission dated 29 April 2025 (D4 Submission) [REP4-111].	The Applicants note that this representation was previously issued by NGET at Deadline 4, and the Applicants reiterate their response [REP5-037].
REP5-064:2	**2 Status of negotiations** 2.1 As the Examining Authority is aware, NGET has requested that the set of protective provisions that it has put forward for the benefit of its undertaking (**NGET's PP**s, a copy of which are included at **Appendix 4 of NGET's Written Representation**) should be included in the Order. As set out in NGET's Written Representation, NGET's PPs are necessary to avoid serious detriment to not just NGET but multiple third party connectee projects reliant on the delivery of NGET's various projects at this location. 2.2 To this end, NGET's solicitors (Addleshaw Goddard LLP) have been engaging with the Promoter's solicitors. 2.3 Whilst discussions between the parties are ongoing and NGET would not expect the inclusion of NGET's PPs in the Order to be contentious given their purpose and precedent in other development consent orders, an agreed position has not yet been reached with the Promoter.	The Applicants acknowledge this comment. The Applicants are engaged with NGET to discuss the form of protective provisions. The Applicants are unable to accept these provisions as they may constrain the Applicants' ability to carry out the Projects within the scope of the **Draft Development Consent Order (DCO) (Revision 9)** [document reference 3.1]. NGET are seeking protections for areas of land required for the delivery of other schemes not yet consented or even applied for consent in the vicinity of the Projects. This could restrict the Applicants' ability to undertake works in the area around the proposed Birkhill Wood National Grid Substation. The land subject to this additional protection is not yet identifiable and NGET is yet to submit a Town and Country Planning Application for the site, so it is subject to change and further refinement. Furthermore, NGET do not yet have land rights in relation to some of the land subject to this additional protection. The purpose of the protective provisions is to provide protection to the statutory undertakers existing assets. The Applicants therefore consider that NGET's position to include future assets goes above and beyond what protective provisions are intended to cover and the protections provided to statutory undertakers in the Planning Act 2008. The Applicants consider that interactions between the Projects and any future projects should be addressed in a private co-operation agreement and have held discussions with NGET regarding a revised set of Heads of Terms that captures the salient points in more detail and covers the anticipated boiler plate provisions that were lacking from the initial draft circulated by NGET. Without sufficient protection and assurances from NGET, the Applicants cannot agree to these provisions as currently proposed by NGET. The Applicants require certainty that it can carry out works within the scope of the **Draft DCO (Revision 9)** [document reference 3.1].
REP5-064:3	**3 Summary of NGET's position** 3.1 In light of the above, NGET's position remains as set out in NGET's Written Representation and in NGT's D4 Submission. 3.2 NGET's Written Representation provides both NGET's PPs and the explanation as to why these protective provisions are necessary. In summary, NGET has existing and future infrastructure that needs to be protected via the protective provisions that NGET is proposing be included in the final	The Applicants and NGET are continuing to negotiate the protective provisions and co-operation agreement and hope to reach an agreement before the end of the examination subject to a resolution on the outstanding issues, including in relation to interactions with future infrastructure as noted above. If agreement has not been reached by Deadline 8, the Applicants will update the **Draft DCO (Revision 9)** [document reference 3.1] with the Applicants' preferred form of protective provisions in order that the ExA has the opportunity to consider the proposed wording during the Examination. In these circumstances, the Applicants

I.D.	NGET Response	Applicants' Response
	form of the Order. These protective provisions include wording that has precedent in other development consent orders that have been recently granted. Without inclusion of the protective provisions, serious detriment would be caused to NGET's undertaking as well as to other third-party projects that are reliant on NGET's existing and future infrastructure (including the Dogger Bank South Project itself). 3.3 Since an agreed position has not been reached with the Promoter, NGET must continue to maintain the position set out in NGET's Written Representation and requests that NGET's PPs should be included in the Order accordingly.	would continue to engage with NGET to seek to agree the form of protective provisions prior to the close of Examination.

2.5 Natural England – Cover Letter

Table 2-6 – The Applicants' response to Natural England's Cover Letter Deadline 5 Document [REP5-053]

I.D.	Natural England's Response	Applicants' Response
REP5-053:1	**Natural England's Deadline 5 Submissions** Natural England has reviewed the documents submitted by the Applicant at Deadline 4. An update of Natural England's position regarding documents relevant to our remit is provided in Annex 1, including anticipated timing of responses. Natural England is also submitting the following detailed responses, signposted from Annex 1: • EN010125 489458 DBS – Natural England's Risk and Issues Log Deadline 5 • EN010125 489458 DBS Appendix B5 – Natural England's Advice on Marine Physical Environment Deadline 5 • EN010125 489458 DBS Appendix C5 – Natural England's Advice on Benthic and Intertidal Ecology Deadline 5 • EN010125 489458 DBS Appendix E5 – Natural England's Advice on Fish and Shellfish Deadline 5 • EN010125 489458 DBS Appendix F5 – Natural England's Advice on Marine Mammals Deadline 5 • EN010125 489458 DBS Appendix G5 – Natural England's Advice on Offshore Ornithology Deadline 5 • EN010125 489458 DBS Appendix H5 – Natural England's Advice on Offshore Ornithology Compensation Deadline 5 • EN010125-001613 489458 DBS Appendix K5 - Natural England's Response to ExA's Second Written Questions (ExQ2) • EN010125 489458 DBS Appendix M5 – Natural England's Comments on Action points arising from Issue Specific Hearing 5 [EV10-002]	No response is required.
REP5-053:2	**Action points arising from Issue Specific Hearing 5** Following on from our submission at Deadline 4 [REP4-126], Natural England has compiled our responses to outstanding Action Points outlined in the document Action Points from Issue Specific Hearing 5 (ISH5) held on 10 April 2025 [EV10-002] in Appendix M5 of our Deadline 5 submission.	No response is required. However, the Applicants direct Natural England and the Examining Authority to **Table 2-24** of this document.
REP5-053:3	**The Examining Authority's (ExA's) Second Written Questions (ExQ2)** As requested in The Examining Authority's Second Written Questions (ExQ2) [PD-021], Natural England has compiled our responses to relevant questions in Appendix K5 of our Deadline 5 submission.	No response is required. However, the Applicants direct Natural England and the Examining Authority to Table 2-9 of **The Applicants' Comments on the Responses to ExQ2** [document reference 16.3].
REP5-053:4	**The Natural Features Potentially Affected by this Application** Following on from our Relevant Representations [RR-039] and as requested in the Examiner's Question [PD-021] HRA.2.5, Annex 2 provides updated Tables of designated sites and interest features which may be significantly affected by the proposed project, based on the information provided to date. It should be noted that this list may change if new evidence	See the Applicants' response to HRA.2.5 in **The Applicants' Comments on Responses to ExQ2** [document reference 16.3] and **Table 2-7** and **Table 2-8** of this document.

I.D.	Natural England's Response	Applicants' Response
	emerges during the Examination. GOV.UK links have been provided to Natural England's Designated Site View system where the citation, conservation objectives and supplementary advice for designated nature conservation sites can be located. We have provided links, as these are large and live documents which are updated on a regular basis to incorporate the most up to date evidence. To avoid potentially out of date or inaccurate documents being referred to during the Examination we recommend that the links are utilised.	
REP5-053:5.1	**Key progress and/or areas of concern for each thematic area** Noting Natural England's comments at Deadline 4 that we considered that significant progress in our advice was likely to have occurred at Deadline 5, we have provided a summary below of key outstanding concerns and/or resolutions for each thematic area.	No response is required.
REP5-053:5.2	**Offshore Ornithology** Whilst some minor concerns remain regarding the in-combination assessment, these will not materially impact assessment conclusions (with the exception of Farne Islands SPA) and Natural England is content with the Applicant's Project alone assessment. Whilst Natural England and the Applicant are unlikely to agree on the appropriate impact values to use, impact values are now available according to both the Applicant's and SNCBs preferred parameters for calculating compensation requirements. We have provided our conclusions in relation to the EIA and HRA assessment in Appendix G5 (or see Annex 2 below). Natural England's key outstanding concern with respect to the Offshore Ornithology topic is the lack of provision of density hotspot modelling to inform further mitigation that could be applied. Please see our response to ISH Action 7 in Appendix M5 for further detail.	See the Applicants' responses provided in **Table 2-20** (Appendix G5), **Table 2-7** and **Table 2-8** (Annex 2), and **Table 2-24** (Appendix M5) of this document.
REP5-053:5.3	**Benthic ecology** *Decommissioning of infrastructure, licensing of cable protection within designated sites and benthic compensation* We have reviewed the Applicant's position regarding infrastructure decommissioning and continue to disagree with it. We do not believe it is in the spirit of the Strategic Compensation Strategy or Marine Recovery Fund (MRF). In addition, there is no certainty that the Applicant will be able to use the MRF in the way they propose as the policy is not yet final. Therefore, we advise that they are planning at own risk until the MRF launches and the guidance is published. We are in discussions with DEFRA and DESNZ benthic compensation and MRF teams (respectively) and we will provide further update at Deadline 6.	The Applicants acknowledge Natural England's comment, although it is unclear what is meant by the "spirit" of the Strategic Compensation Strategy or Marine Recovery Fund. The Applicants note that their response to question BE.2.10 in **The Applicants Responses to the Examining Authority's Second Written Questions (ExQ2)** [REP5-036] provides a clear illustration of how their position accords with the relevant decommissioning guidelines for offshore renewable energy projects that have been provided by Government in the form of Decommissioning of offshore renewable energy installations under the Energy Act 2004: guidance notes for industry (2019). The Applicants will note in both the **Cable Statement (Revision 4)** [REP4-050] and **Outline Scour Protection Plan (Revision 3)** [REP2-051] that an assessment of the benefits and drawbacks of different scour and cable protection solutions considered for use will form part of the Decommissioning Programme. This assessment will include consideration of removability and other characteristics relevant to the mitigation hierarchy. The updated **Cable Statement (Revision 5)** [document reference 8.20] has been submitted at Deadline 6.
REP5-053:5.4	**Marine processes** Natural England concerns regarding characterisation of benthic receptors for Flamborough Head SAC have been addressed, and we are satisfied that an Adverse Effect on Integrity can now be ruled out.	The Applicants direct Natural England to the responses provided on these matters in REP5-055:C9 of **Table 2-14** of this document.

I.D.	Natural England's Response	Applicants' Response
	We understand that the Applicant intends to submit nearshore modelling at Deadline 6 to enable progress with respect to cable protection and longshore sediment transport impacts in relation to Holderness Inshore MCZ and the Humber Estuary SAC. The Applicant has indicated in [REP4-088] and in their Written Summaries of Oral Submissions at ISH5 [REP4-086] that as Dogger Bank is not a sand bank in terms of morphology (rather a complex set of glacial landforms covered with a veneer of sand), they did not assign it a high value. Natural England directs the ExA and competent authority for the HRA to the conservation objectives for Dogger Bank SAC which sets out the high value of this Annex I sandbank. The SNCBs fundamentally disagree with the Applicant on this. Having thoroughly considered this, we do not believe that resolution will occur during Examination.	
REP5-053:5.5	**Marine mammals** The Applicant has demonstrated that if a 10 dB reduction in underwater noise (UWN) was achieved through primary or secondary mitigation, it would likely remove the significant impacts on marine mammal populations currently predicted and enable adverse effects to be ruled out on all remaining features of concern. However, the Applicant has not committed to delivering this. Natural England advise the Applicant to commit to reducing UWN by 10dB via primary and/or secondary mitigation, with the exact methods to be deployed determined post-consent. A commitment of this nature would resolve the significant majority of outstanding issues for this thematic area, and negate the need for additional derogations proposals.	The Applicants have incorporated the following wording into the **Draft DCO (Revision 9)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5, with minor amendments to include reference to primary measures and ensure that the drafting is suitable for a statutory instrument. This was provided by the MMO in response REP4-115:3.5. *'(g) in the event that driven or part-driven pile foundations are proposed to be used, a marine mammal mitigation protocol (in accordance with the outline marine mammal mitigation protocol), the intention of which is to prevent injury to marine mammals, following current best practice as advised by the relevant statutory nature conservation bodies and which must include consideration of noise reduction methods and/or, deployment of noise mitigation systems or noise abatement systems that will be utilised to manage sounds from those piling activities and such protocol must include full details and justification for the mitigation chosen or excluded for deployment;'* The Applicants consider this wording to be sufficient to satisfy the MMO and are engaging with Natural England on the condition wording submitted.
REP5-053:5.6	**Fish and shellfish** Natural England's key outstanding concern with respect to Fish and Shellfish is the indirect effects assessment and quantification of impacts on sandeel, which has not progressed at this deadline. To facilitate progression, we have provided further detail on what we consider the assessment should entail in Appendix E5 of our Deadline 5 submission.	See the Applicants' responses provided in **Table 2-17** of this document.
REP5-053:6	**Statutory Cost Recovery for NSIP Engagement** We note that further clarity may be helpful with regard to the charging regime for NSIPS. Statutory cost recovery now requires the statutory nature conservation bodies to recover all their costs for engaging with NSIPS. The legislative basis for charging is set out here. This means we must cost recover the staff time for our engagement in relation to all stages of the NSIP process. Our ways of working and our service standards remain unchanged.	No response is required.

Table 2-7 The Applicants' Response to Natural England's Table 1: Designated Nature Conservation Sites [REP5-053]

Site Name	Conservation Advice	Features for which Outstanding Concerns Remain	Reason why feature still remains a concern	Features no longer a concern and why	Applicants' Response
Holderness Inshore MCZ	Marine site detail [redacted]	High energy circalittoral rock Intertidal sand and muddy sand Moderate energy circalittoral rock Spurn Head (subtidal) and "the Binks" Subtidal coarse sediment Subtidal mixed sediments Subtidal mud Subtidal sand	Natural England requires further information on potential disruption of sediment transport. The Applicant has indicated [REP4-088] that a technical note will be provided at Deadline 5 regarding the potential effects of cable protection measures on sediment transport in the nearshore environment. We will provide further comments accordingly.		The Applicants direct Natural England to the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP5-040] technical note submitted at Deadline 5.
Holderness Offshore MCZ	Holderness Offshore MPA | JNCC - Adviser to Government on Nature Conservation	Subtidal coarse sediment Subtidal sand Subtidal mixed sediments Ocean quahog *(Arctica islandica)* North Sea glacial tunnel valleys	Whilst we are satisfied with the Applicant's assessment predictions that sediment deposition from trenching and levelling for the offshore export cable corridor is predicted to be localised and the seabed recoverable, this is dependent on the appropriate mitigation being secured. Please see Appendix B5 of Natural England's Deadline 5 submission for further detail.		The Applicants welcome Natural England's agreement. See further responses provided in **Table 2-9** of this document.
Dogger Bank SAC	Dogger Bank MPA | JNCC - Adviser to Government on Nature Conservation	Sandbanks slightly covered by seawater all the time	It has already been concluded in the Plan Level HRA that an AEoI cannot be ruled out for this feature, discussions are now focussed on the quantification of impact. As such this feature will remain in this table.		The Applicants acknowledge Natural England's comment.
Flamborough Head SAC	Marine site detail [redacted]	Reefs Submerged or partially submerged sea caves Vegetated sea cliffs of the Atlantic and Baltic coasts		Natural England now considers that the necessary transparency and detail in the Applicants assessment and assessment conclusions has been provided, and we can agree with the Applicants conclusions of no likely AEoI on the relevant listed features. Please see Appendix K5 of Natural England's Deadline 5 submission for further detail.	The Applicants welcome Natural England's agreement. See further responses provided in REP5-062: BE.2.6 in Table 2.9 of **The Applicants' Comments on the Responses to ExQ2** [document reference 16.3].
Humber Estuary SAC	Marine site detail [redacted]	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	For habitats, see Holderness Inshore MCZ.		See the Applicants' responses provided in **Table 2-19** of this document.

Site Name	Conservation Advice	Features for which Outstanding Concerns Remain	Reason why feature still remains a concern	Features no longer a concern and why	Applicants' Response
		Estuaries Mudflats and sandflats not covered by seawater at low tide Salicornia and other annuals colonising mud and sand Sandbanks which are slightly covered by sea water all the time Grey seal (Halichoerus grypus)	An AEoI cannot be ruled out for grey seal for the impacts of the project in-combination with other plans or projects. We advise that additional commitments to mitigation to reduce underwater noise are required. See Appendix F5 for further detail.		
Southern North Sea (SNS) SAC	Southern North Sea MPA | JNCC - Adviser to Government on Nature Conservation	Harbour porpoise (Phocoena phocoena)	The Applicant's current commitment to securing noise reduction mitigation pre-consent is insufficient to remove this as a concern. An AEoI cannot be ruled out for impacts in-combination with other plans or projects. Please see Appendix F5 for further detail.		See the Applicants' responses provided in **Table 2-19** of this document.
Berwickshire North Northumberland Coast (BNNC) SAC	Berwickshire and North Northumberland Coast - Special Areas of Conservation (jncc.gov.uk)	Grey seal (Halichoerus grypus)	An AEoI cannot be ruled out for grey seal for the impacts of the project alone and in-combination with other plans and projects. We advise that additional commitments to mitigation to reduce underwater noise are required. See Appendix F5 for further detail.		See the Applicants' responses provided in **Table 2-19** of this document.
Farne Islands SPA	Marine site detail [redacted]	Guillemot (Uria aalge), Breeding Seabird assemblage, Breeding	An AEoI cannot be ruled out for impacts to guillemot in-combination with other plans and projects. See Appendix F5 for further detail	Natural England consider that the contribution to impacts to the seabird assemblage are sufficiently small to remove this from concern.	The Applicants welcome Natural England's agreement that Adverse Effects on Integrity (AEoI) on the seabird assemblage of this site can be ruled out. See the Applicants' responses provided in **Table 2-20** of this document regarding the potential AEoI for guillemot.
Flamborough and Filey Coast SPA	Marine site detail [redacted]	Guillemot (Uria aalge), Breeding Kittiwake (Rissa tridactyla), Breeding Razorbill (Alca torda), Breeding Seabird assemblage, Breeding	Natural England advise that AEoI cannot be ruled out for: - Kittiwake (both alone and in-combination), -Guillemot (in-combination), -Razorbill (in-combination) -Seabird Assemblage (in-combination)	Natural advise that and AEoI can be ruled out on gannet for the impacts of the project alone and in-combination.	The Applicants welcome Natural England's agreement that AEoI on gannet for the impacts of the project alone and in-combination can be ruled out for this site. See the Applicants' responses provided in **Table 2-20** of this document regarding the remaining species Natural England considers there to be a potential AEoI for.

Site Name	Conservation Advice	Features for which Outstanding Concerns Remain	Reason why feature still remains a concern	Features no longer a concern and why	Applicants' Response
			Please refer to Natural England's Deadline 5, Appendix G5 for further detail.		
Greater Wash SPA	Marine site detail [redacted]	Red-throated diver (Gavia stellata), Non-breeding		Natural England welcome the clarification provided by the Applicant in [REP4-088] and are satisfied that an AEoI on Red throated diver in Greater Wash SPA can be ruled out due to the very limited interaction between the cable works area and the Greater Wash SPA and 2km buffer.	The Applicants welcome Natural England's agreement.
Humber Estuary SPA	Marine site detail [redacted]	Avocet (Recurvirostra avosetta) Bar-tailed godwit (Limosa lapponica) Bittern (Botaurus stellaris) Black-tailed godwit (Limosa limosa islandica) Dunlin (Calidris alpina alpina) Golden plover (Pluvialis apricaria) Hen harrier (Circus cyaneus) Knot (Calidris canutus) Little tern (Sternula albifrons) Marsh harrier (Circus aeruginosus) Redshank (Tringa totanus) Ruff (Calidris pugnax) Shelduck (Tadorna tadorna) Waterbird assemblage	Natural England do not consider these features to be of immediate concern, however they could become a concern if impacts to the Humber Estuary SAC cannot be ruled out.		The Applicants direct Natural England to the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP5-040] technical note submitted at Deadline 5.
Humber Estuary Ramsar	Designated Sites View [redacted]	Bar-tailed godwit (Limosa lapponica) Black-tailed godwit (Limosa limosa) Dunlin (Calidris alpina) Golden plover (Pluvialis apricaria) Grey seal (Halichoerus grypus) Knot (Calidris canutus) Natterjack toad (Epidalea calamita)	As for Humber Estuary SPA.		The Applicants direct Natural England to the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP5-040] technical note submitted at Deadline 5.

Site Name	Conservation Advice	Features for which Outstanding Concerns Remain	Reason why feature still remains a concern	Features no longer a concern and why	Applicants' Response
		Redshank (Tringa tetanus) Shelduck (Tadorna tadorna), Wintering			

Table 2-8 The Applicants' Response to Natural England's Table 2: National Sites [REP5-053]

Site Name	Conservation Advice	Features for which Outstanding Concerns Remain	Reason why feature still remains a concern	Features no longer a concern and why	Applicants' Response
Flamborough Head SSSI	SSSI detail[redacted]	Reefs Submerged or partially submerged sea caves Vegetated sea cliffs of the Atlantic and Baltic coasts		All features. As for Flamborough Head SAC	The Applicants welcome Natural England's agreement. See further responses provided in REP5-062: BE.2.6 in Table 2.9 of **The Applicants' Comments on the Responses to ExQ2** [document reference 16.3].
Humber Estuary SSSI	Humber Estuary - 2000480 SSSI - 2000480	As per Humber Estuary SPA Above. Non-breeding birds: Brent goose (dark-bellied) (Branta bernicla bernicla) Curlew (Numenius arquata) Golden plover (Pluvialis apricaria) Lapwing (Vanellus vanellus) Marine Mammals: Grey seal, (Halichoerus grypus) Features: Assemblages of breeding birds - Lowland open waters and their margins	As per Humber Estuary SPA and SAC Above.		The Applicants direct Natural England to the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP5-040] technical note submitted at Deadline 5.

2.6 Natural England - Appendix B5 Marine Physical Environment

Table 2-9 – The Applicants' response to Natural England's Appendix B5 to the Natural England Deadline 5 Submission - Marine Physical Environment [REP5-054]

I.D.	Natural England's Response	Applicants' Response
REP5-054: B0	**Appendix B5 – Natural England's Advice on Marine Physical Environment at Deadline 5** In formulating these comments, the following documents submitted by the Applicant have been considered in relation to the impacts of Dogger Bank South (East and West) Offshore Wind Farm (DBS) on Marine Physical Environment: • [REP4-051] 8.20 Cable Statement (Revision 4) (Tracked) • [REP4-053] 8.23 In Principle Monitoring Plan (Revision 3) (Tracked) • [REP4-092] 14.7 Review of the Flamborough Front • [REP2-018] Marine Physical Processes Modelling Technical Report (Revision 3) • Our detailed comments on documents submitted by the Applicant in relation to Marine Physical Environment as listed above are provided in Tables 1 - 3 below.	No response is required.
REP5-054: B1	**Flamborough Front** Natural England welcomes the additional information and monitoring plans provided by the Applicant on impacts to the Flamborough Front. Whilst the EIA assessment has been updated, we maintain that a more precautionary approach is appropriate given the current evidence gaps, potentially long-term and wide-scale nature of the impact, and high ecological value of the Flamborough Front. We have signposted the Applicant to a newly available dataset which used the Dogger Bank South area as a case study, which could increase understanding and inform baseline characterisation to update the impact assessment. We have also provided some minor comments on the monitoring plans.	See the Applicants' responses regarding the Flamborough Front in **Table 2-10** below.

REP5-054: B2	**Sandwave clearance**
	Natural England accepts the Applicant's assessment that sediment deposition from sandwave clearance is predicted to be localised and the seabed recoverable within a year with respect to Suspended Sediment Concentrations (SSC). However, this is dependent on appropriate mitigation being secured and only relates to seabed and not recovery on Annex I sandbank features. We have listed previously discussed mitigation measures to minimise impacts and confirm modelling predictions for sandwave levelling associated with sandbank systems and their current status. We advise that outstanding measures are appropriately secured.
	• *Depositing like sediment on like sediment*
	  ○ The Applicant has now committed to this in the Cable Statement for both within and outside of Dogger Bank SAC. We advise this is included in the Commitment Register. See Table 3 for further comments.
	• *A fall/down pipe is used (should a trailing suction hopper dredger be used) to minimise sediment dispersal*
	  ○ This has not been committed to. We note that for Five Estuaries and Outer Dowsing (and other offshore consented OWFs) there is a commitment to use a downpipe to
		The Applicants provide the following comments on each mitigation measure suggested below under the headings used by Natural England.
		• *Depositing like sediment on like sediment.*
		This commitment will be added to the next update of the **Commitments Register (Revision 2)** [REP2-025], to be submitted at Deadline 7.
		• *A fall/down pipe is used (should a trailing suction hopper dredger be used) to minimise sediment dispersal.*
		As previously noted in responses on this topic, such as that provided most recently in response to MCP.2.7 in **The Applicants Responses to the Examining Authority's Second Written Questions (ExQ2)** [REP5-036], the Applicants do not believe the suggested mitigation to be technically feasible and, as such, can make no commitments to delivering it. Having reviewed the submissions made by Outer Dowsing into their examination, the Applicants note that this project does not appear to have made any commitment to the use of a fall pipe.
		• *An outline sand wave levelling, deposition and recovery plan should be provided as either a standalone document or as part of the Cable Statement /Outline Cable Burial Risk Assessment (see Table 2 for further detail).*

I.D.	Natural England's Response	Applicants' Response
	ensure that sediment can be deposited in a target location adjacent to but upstream of the sandbank (both Annex I and Feature of Conservation Importance FCI) and within similar sediment type. This is to ensure the greatest likelihood of feature recovery including both structure and function, Therefore, there is an expectation that this is deliverable for all projects. • *An outline sandwave levelling, deposition and recovery plan should be provided as either a standalone document or as part of the Cable Statement /Outline Cable Burial Risk Assessment (see Table 2 for further detail)* ○ The Cable Statement [REP4-051] states that "Further detail relating to sand wave levelling, deposition and sandbank recovery will be provided in the final Cable Statement(s)". We consider this should be updated to explicitly include provision of a plan should sandwave levelling be needed. • *Pre- and post-construction monitoring should be used to assess geomorphological recovery after cable installation (with management interventions identified).* Please see Appendix J of our Deadline 3 submission [REP3-056] for further comments.	The Applicants have noted in the **Cable Statement (Revision 4)** [REP4-050] that a plan for sand wave levelling will be provided as an Appendix to the Final Cable Statement(s) should sand wave levelling be required as part of the Projects. • *Pre- and post-construction monitoring should be used to assess geomorphological recovery after cable installation (with management interventions identified).* The Applicants have committed within the **In Principle Monitoring Plan (Revision 4)** (REP5-027) to pre-construction geophysical surveys to characterise seabed bed geomorphology (e.g. sand waves and sand banks) and post-construction geophysical surveys to monitor geomorphological change and seabed recovery. Within Appendix J of REP3-056, Natural England advises that "the hypotheses to be tested by the monitoring should be agreed as part of the IPMP" (NE ref 3 Table 1-2). Defining appropriate and measurable hypotheses requires: • *A plan for sand wave levelling which will be provided as an Appendix to the Final Cable Statement(s) should sand wave levelling be required as part of the Projects.* • *The results of pre-construction monitoring as defined in **In Principle Monitoring Plan (Revision 4)** (REP5-027).* Therefore, the Applicants consider the In Principle Monitoring Plan (IPMP) in its current format is appropriate at this stage of the development of the Projects and note there will be opportunities for Natural England to engage and agree the details of the hypotheses in relation to sand wave levelling in the post consent stage of the Projects.

Table 2-10 - The Applicants' Responses to Table 1 - Natural England's Advice On: [REP4-092] 14.7 Review of the Flamborough Front [REP5-054]

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-054: B3	General Comment	Natural England welcomes the literature review carried out by the Applicants regarding recent studies on potential offshore windfarm impacts on stratification.	N/A	No response is required.
REP5-054: B4	3.3	The Applicant highlights a number of recent research projects (e.g. ECOWind and eSWEETS3) which aim to fill the evidence gap on stratification and associated ecosystem responses. However, it is not stated whether the Applicants have approached any of the ongoing/new research projects to explore collaboration or knowledge sharing opportunities.	Natural England encourages collaboration at the earliest opportunity with relevant academic/research groups to help increase understanding of the potential impacts on the Flamborough Front due to the proposed developments. We also advise the Applicant to consider the data (available on the Marine Data Exchange) provided by the Crown Estate's FRONTWARD (Fronts for marine Wildlife Assessment for Renewable Developments) Project. This includes new spatial and temporal information on the locations and persistence of ocean fronts, both for sea surface temperature and surface colour (chlorophyll-a). These new datasets may help increase understanding, inform baseline characterisation, and update the impact assessment.	Through one of their shareholders, RWE, the Applicant have engaged in collaboration on recent research by providing geophysical and environmental survey data for ECOWind from the Awel y Mor development. RWE receive project newsletters updating them on any findings and representatives attend project update meetings, further progressing their involvement. The Applicants acknowledge the new data recently published by the Crown Estate FRONTWARD project. As this was unavailable at the time of submitting the **Review of Flamborough Front** [REP4-092] technical note it was not considered. The Applicants will consider this data during the pre-construction stage of the in-principal monitoring proposed for the marine physical environment to establish the duration and frequency of occurrence of the Flamborough Front within the Array Areas to inform the design of post-construction monitoring (see **In Principle Monitoring Plan (Revision 4)** [REP5-028]. Whilst it is acknowledged the new data may reduce uncertainty in the definition of scale and frequency of the impact, as these are already defined as medium to high, the new data will either confirm or reduce the magnitude of impact which would lead to no change or a reduction in the significance of

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
				effect. Furthermore, as the Applicants have already committed to monitoring of the Flamborough Front, a review of this data would not change these commitments. Therefore, the Applicants will undertake this review during the pre-construction phase of the Projects as secured in **In Principle Monitoring Plan (Revision 4)** [REP5-028], which itself is secured in Condition 15 of Deemed Marine Licences (DMLs) 1 and 2; Condition 13 of DMLs 3 and 4, and Condition 11 of DML5 of the **Draft Development Consent Order (DCO) (Revision 9)** [document reference: 3.1].
REP5-054: B5	4	Natural England welcomes the Applicants' reassessment of the significance of potential changes to water circulation (Flamborough Front) due to the presence of Dogger Bank South infrastructure (turbines and offshore platforms). However, we note that the assessment conclusion of minor adverse significance of effect remains not significant in EIA terms. This was based on the Flamborough Front having low sensitivity (low tolerance, high recoverability, and medium value) coupled with a medium magnitude of impact. Given the current evidence gaps, potentially long-term and large-scale nature of the impact, coupled with the high value of the Flamborough Front as an area of higher biodiversity, we would advise adopting a more precautionary approach to the impact assessment.	Natural England advises a more precautionary approach to the impact assessment particularly given the potential for higher marine biodiversity at the Flamborough Front. Furthermore, we advise the Applicant to consider the new information and observations presented by the FRONTWARD Project on thermal front location, strength and persistence and correlation between fronts and primary production. These data may increase baseline understanding and inform the impact assessment.	The Applicants have committed to monitoring the Flamborough Front within the **In Principle Monitoring Plan (Revision 4)** [REP5-028]. This is a form of mitigation against the impact and is therefore precautionary, noting monitoring is not typically required for a minor adverse significance of effect. It will also provide the data to test if the conclusions of the Environmental Statement (ES) are valid. See response to REP5-054: B4 above in relation to the assessment of new data from the FRONTWARD Project.
REP5-054: B6	4.2	We note that the cumulative effects assessment has also been reassessed, which is welcome. However, the outcome remains minor adverse. As we have advised above, given the current evidence gaps, potentially long-term and wide-scale nature of the impact, and high ecological value of the Flamborough Front, we advise a more precautionary approach to the impact assessment is appropriate.	Please see our advice above (ref 3).	See response to REP5-054: B4 above.
REP5-054: B7	5.2	We note the Applicants' commitment to monitoring to address specific evidence gaps regarding the scale and frequency of impacts, cumulative effects, and significance of changes in water circulation and primary productivity on ecosystems.	Natural England welcomes the Applicants' commitment to this monitoring and to helping increase understanding of the potential changes to the Flamborough Front due to the presence of the proposed developments.	The Applicants acknowledge Natural England's comment.
REP5-054: B8	6	The Applicants have stated that based on the ES conclusions, no mitigation is proposed. We advise that given the potential for large-scale, long-term anthropogenic impacts to stratification and primary production, thresholds for changes and mitigation	We advise that, considering the potential for large-scale hydrodynamic changes and effects on primary production, that consideration should be given to (a) thresholds of change and (b) potential mitigation measures.	A minor adverse significance of effect is not significant in EIA terms meaning no mitigation is proposed, following standard approaches to EIAs. However, the Applicants have committed to monitoring the effects of foundation structure on the Flamborough Front as outlined in **In Principle Monitoring Plan (Revision 4)** [REP5-028]. As part of the pre-construction stage of this

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		measures should be considered in advance of construction. For example, designing the array layout to minimise the risk posed by the proposed development alone, and cumulatively, on the stratified water column.		monitoring, any new research or modelling will be considered to inform the design of the monitoring plan. At present, there is not enough data or confidence in model outputs to understand how different layouts may affect water stratification – particularly for an ephemeral and peripatetic feature whose character and location can vary both within and between years - to inform layout design, but this will be considered as part of the pre-construction monitoring.

Table 2-11 - The Applicants' Response to Table 2 - Natural England's Advice On: [REP4-053] 8.23 In Principle Monitoring Plan (Revision 3) (Tracked) [REP5-054]

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-054: B9	Table 1-2	Natural England's previous comments [REP3-056] in relation to 'sandwave/bank characterisation' and 'sandwave/bank recovery rates' have not been addressed in this iteration of the IPMP.	We refer the Applicant to the advice provided in REP3-056.	The Applicants maintain their position as stated in response to REP3-056: A3 in **The Applicants' Responses to Deadline 3 Documents and Additional Submissions** [REP4-088], repeated below for convenience: *There is not sufficient data and information available to define hypothesis in the IPMP as this would require additional survey data. To define hypotheses to be tested in relation to sand wave clearance and recovery, a detailed sand wave characterisation study would be required which will be undertaken using the pre-construction geophysical survey data. These hypotheses will be defined and agreed with the Marine Management Organisation (MMO) in the final monitoring plans post-consent, based on final designs. Depending on the outcomes of initial surveys and an assessment of sand wave mobility, the proposed monitoring will consider thresholds for change and adaptive monitoring approaches, if appropriate.*
REP5-054: B10	Table 1-2	Natural England welcomes the proposed Flamborough Front monitoring to establish the pre-construction baseline. However, depending on availability of satellite imagery, we advise that these pre-construction data should also include the period post-consent onwards to provide a longer timeseries and to inform the baseline characterisation. We note that the Applicant proposes to review up to 5 years of historical satellite imagery, focussing on the summer period when the front is at its strongest. However, we would advise that this period should ocean colour fronts from spring through to autumn. We also signpost the Applicants to the FRONTWARD project datasets. These include monthly and seasonal front data, front strength and persistence, and are based on 10 years of AVHRR sea surface temperature (SST) data, and 7 years of Sentinel-3A OLCI chlorophyll-a. These datasets should increase	Natural England advises that the pre-construction baseline should cover the post-consent period through to the start of construction and include the build-up and decline of SST and ocean colour fronts (i.e. from spring through autumn). We agree with the Applicant that flexibility should be included in the monitoring plan to take account of new techniques and technology as they become available. Similarly, regular reviews of emerging evidence and data should be built into the monitoring plan to allow the Applicant and stakeholders to take stock of the current level of understanding of the risks. Conditions in relation to the provision of the pre-construction monitoring should be included in the DCO/dML	The Applicants acknowledge Natural England's comments and will include the advice in an updated revision of the **In Principle Monitoring Plan (Revision 4)** [REP5-028] to be submitted at Deadline 7. The In Principle Monitoring Plan is secured in Condition 15 of DMLs 1 and 2; Condition 13 of DMLs 3 and 4, and Condition 11 of DML5 of the **Draft DCO (Revision 9)** [document reference: 3.1].

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		understanding of the baseline conditions at, and around, Dogger Bank and the DBS Array Areas. We also note in the 'Details' column of Table 1-2, that it does not state where the monitoring plan would be submitted for review and agreement, six months prior to construction. This should be clarified. It is also stated that the pre-construction survey technical report will include details on thresholds and trigger points for intervention. We advise that it would be useful to consider and agree thresholds of change and trigger points for interventions with relevant stakeholders in advance.		
REP5-054: B11	Table 1-2	We welcome the Applicant's proposal to monitor far-field wake effects. However, we note that the post-construction monitoring does not include monitoring of changes to the Flamborough Front. This should be carried out from construction onwards, to provide a comparison against baseline conditions.	Assuming ongoing SST and chlorophyll data availability, we would advise that monthly, seasonal, and annual changes should be monitored through 1-5 years post-construction, with a review period at 5 years.	The Applicants acknowledge Natural England's comments and will include the advice in an updated revision of **In Principle Monitoring Plan (Revision 4)** [REP5-028] to be submitted at Deadline 7.

Table 2-12- The Applicants' Response to Table 3 - Natural England's Advice On: [REP4-051] 8.20 Cable Statement (Revision 4) (Tracked) NE [REP5-054]

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-054: B12	1.4.5.4	Natural England notes that the Applicant has committed to depositing like sediment on like sediment. While this is welcomed by Natural England, we would also advise consideration of the following mitigation measures to reduce environmental impacts: • ensuring that all possible efforts are made to avoid areas of sandwaves/to minimise the need for sandwave levelling by micro-routing the cable • where sandwaves need to be crossed, this be done at a high crossing angle to minimise dredge volumes • cable installation should occur as soon as possible after levelling to reduce the need for additional preparation work and minimise disturbance timeframes • ideally dredging should not occur to a depth where the surface sediment changes (e.g. underlying till layer). • Disposition of dredge sediment should be adjacent to and slightly upstream of the sandbank to actively encourage recovery of structure and function • A downpipe/fall pip should be used to enable targeted disposition as set out above.	Natural England advises that best practice should be followed to assess and minimise environmental impacts associated with sandwave levelling, including consideration of the mitigation measures listed opposite. We would also advise that pre-construction surveys, in areas where mobile bedforms are anticipated, should adopt a survey corridor wide enough to identify areas with deeper troughs that have the potential to affect the asset over its lifetime, unless these can be identified with confidence in existing data. This will increase understanding of the seabed mobility in the targeted area(s), reduce cable exposure risk, and inform decision making on cable protection requirements. This process should be informed by estimating sandwave migration rates and, thus, estimating the lowest observed trough that could migrate to a given point along the centreline (actual location of the cable) through the project lifetime. Sandwave levelling can then be carried out to	The Applicants provide the following comments on each mitigation measure suggested below under the headings used by Natural England. • *ensuring that all possible efforts are made to avoid areas of sand waves/to minimise the need for sand wave levelling by micro-routing the cable.* This mitigation is already included in the Applicants' proposals, namely through commitment C089 in the **Commitments Register (Revision 2)** [REP2-025] which states, *"Route selection and micro-siting of the cables will be used to avoid areas of seabed that pose a significant challenge to their installation where practicable, including for example areas of sand waves and mega ripples. This will minimise the requirement for seabed preparation (levelling) and the associated seabed disturbance"*. For further clarity, this statement has been added to the updated **Cable Statement (Revision 5)** [document reference 8.20] submitted at Deadline 6. • *where sand waves need to be crossed, this be done at a high crossing angle to minimise dredge volumes.* A statement to the above effect has been added to the **Cable Statement (Revision 5)** [document reference 8.20] submitted at Deadline 6 noting that, sand

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
			this estimated vertical reference level and the cable buried to the recommended depth of lowering (DoL).	waves will be crossed at an angle as close to 90 degrees as possible to minimise dredge volumes where conditions allow. • *cable installation should occur as soon as possible after levelling to reduce the need for additional preparation work and minimise disturbance timeframes.* A statement to the above effect has been added to the **Cable Statement (Revision 5)** [document reference 8.20] submitted at Deadline 6 noting that cable installation will occur as soon as is reasonably practicable after levelling to reduce the need for additional preparation work and minimise disturbance timeframes. • *ideally dredging should not occur to a depth where the surface sediment changes (e.g. underlying till layer).* Dredging will need to be undertaken to target levels which will ensure sufficient protection can be achieved through cable burial into the underlying seabed. The target level required will be demonstrated through the final Cable Burial Risk Assessment(s). If target burial depths are not achieved greater requirements for external protection might be required. The Applicants would assume that Natural England's preference would be for the Applicants to dredge to a sufficient depth to achieve target burial rather than ensuring adequate cable protection through the greater use of external cable protection. As a result, the Applicants do not propose to apply this mitigation. • *Disposition of dredge sediment should be adjacent to and slightly upstream of the sandbank to actively encourage recovery of structure and function.* The Applicants have not proposed depositing sediment updrift of areas of dredging activity. In the Applicants' view, doing so would incur potentially avoidable environmental impacts. The reason for this is that there may be yet to be determined time lags between the completion of dredging in an area and the delivery of any associated construction activities. Logic dictates that, in such a scenario, the dredged sediment may well move through natural process into the previously dredged area. Should this happen further dredging would then be required. Self-evidently this additional seabed preparation would cause avoidable environmental effects. • *A downpipe/fall pip should be used to enable targeted disposition as set out above.* As previously noted in responses on this topic, such as that provided most recently in response to MCP.2.7 in **The Applicants Responses to the Examining Authority's Second Written Questions (ExQ2)** [REP5-036], the Applicants do not believe the suggested mitigation to be technically feasible and, as such, can make no commitments to delivering it. If Natural England can demonstrate the feasibility of this request, then the Applicants will give it further consideration.

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-054: B13	1.4.5.4, para 37	It is stated in 1.4.5.4 and the Revision Change Log that "the Applicants consider that they can commit to depositing like sediment on like sediment both within and beyond the boundary of the Dogger Bank SAC". Natural England welcomes this, however it is unclear what extent beyond the SAC the new commitment covers.	We advise that clarification is provided on whether the commitment to depositing like sediment on like sediment outside of the Dogger Bank SAC applies to the full export cable corridor, and particularly the section of corridor adjacent to Holderness Offshore MCZ. We also advise that this commitment is included in the Commitment Register.	The Applicants can confirm that the commitment to depositing like sediment on like sediment outside of the Dogger Bank SAC applies to the full Offshore Export Cable Corridor. This is detailed in the **Cable Statement (Revision 5)** [document reference 8.20] and a commitment will be included in the next revision of the **Commitments Register (Revision 2)** [REP2-025] to be submitted at Deadline 7.
REP5-054: B14	Appendix B, section 7	As previously advised [REP3-051], several key cable burial risks have been identified along the export cable route including areas of sub-cropping or outcropping bedrock in the nearshore, high strength clays, shallow waters over Dogger Bank, and large mobile features. However, it is not clear where these key risk areas occur along the cable route options. The Applicant has stated [REP4-088] that Appendix F of the CBRA for proposed remedial protection and the key risks column would assist in this request, however, whilst the key risks info can be useful, more context would be provided if such figure were provided.	We advise that it would be useful if the Applicant could provide a map identifying the cable sections where these key risks exist, along with an overlay of sensitive receptors and designated areas of seabed. [R&I, B49]	A figure showing the preliminary locations identified for external cable protection presented in Appendix F of Appendix 2 of the **Cable Statement (Revision 5)** [document reference 8.20] together with the locations Marine Protected Areas lying within or adjacent to the Offshore Development Area has been added to the updated **Cable Statement (Revision 5)** [document reference 8.20] submitted at Deadline 6.
REP5-054: B15	Appendix B, section 6.4	The Applicant has clarified [REP4-088] that the offshore export cable route (ECR) dredge volumes in the Cable Statement [REP4-051] are indicative locations that may require dredging based on the most recent site-specific bathymetric (2022) data, whereas the WCS assessed in ES Chapter 8 Marine Physical Environment [APP-080] and the Offshore Works Change Request [AS-141] were based on a worst-case scenario whereby dredging would occur along the entire length of the export cable route (ECR). However, we are concerned that the Cable Statement presents a significantly reduced (i.e. refined) ECR dredge volume of 525,277m³ (ECRs B and C) compared to the WCS ECR maximum dredge volume presented (and therefore applied for) in [AS-141], which for DBS East in isolation is 33,121,800m³. We highlight that in [APP-080] this value was given as 3,384,000m³.	We advise that clarity is needed on whether an error has been made in the WCS ECR dredge volume carried through to [AS-141], but also on whether either of these volumes represent realistic WCS based on the refined values presented in [REP4-051]. We highlight that the volume presented in the Cable Statement is ~ 1.6% of the volume quoted in [AS-141] or 16% of the volume quoted in [APP-080]. We understand that a degree of contingency is needed in all parameters, but we consider that further justification is needed for the volumes as applied for.	The values provided in the **Cable Statement (Revision 5)** [document reference 8.20] are preliminary values based on the latest available survey data collected for the Projects but cannot at this time be considered final as further survey work is required, further design work is to be undertaken, and installation methods are to be developed – all of which may significantly affect the dredge volumes required to deliver the Projects. As such, while the Applicants recognise the difference between the values stated in the **Cable Statement (Revision 5)** [document reference 8.20] and the Environmental Statement (ES), to ensure an absolute worst case was assessed in the ES it was assumed that dredging would occur along the entire length of the Offshore Export Cable Corridor. Given the assessment presented in **Chapter 8 Marine Physical Environment** [APP-080] already concludes that no significant effects may occur as a result of potential dredging activities for the Projects, there would be no material difference in the assessment conclusions should the figure stated in the **Cable Statement (Revision 5)** [document reference 8.20] be used instead. The Applicants note that the volume of dredging of the Offshore Export Cable Corridor for DBS East in isolation has been reduced to 16,560,900m³ following the commitment to the bundling of Offshore Export Cables in pairs. This revised figure will be included in the next revision of **Chapter 8 Marine Physical Environment** [APP-080] to be submitted at Deadline 7.

2.7 Natural England – Appendix C5 Benthic and Intertidal Ecology

Table 2-13 – The Applicants' response to Natural England's Appendix C5 to the Natural England Deadline 5 Submission -Benthic and Intertidal Ecology [REP5-055]

I.D.	Natural England's Response	Applicants' Response
REP5-055:C1	In formulating these comments, the following documents submitted by the Applicant have been considered in relation to the impacts of Dogger Bank South (East and West) Offshore Wind Farm (DBS) on Benthic and Intertidal Ecology: • [REP4-015] 6.1 Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 2 of 4 – Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4) (Tracked) • [REP4-019] 6.2 Habitats Regulations Derogation Provision of Evidence (Revision 3) (Tracked) • [REP4-029] 6.2.3 Report to Inform Appropriate Assessment - Habitats Regulations Assessment - Appendix 3 - Project Level Dogger Bank Compensation Plan - Volume 6 (Revision 3) (Tracked) • [REP4-053] 8.23 In Principle Monitoring Plan (Revision 3) (Tracked) Our detailed comments on documents submitted by the Applicant in relation to Benthic and Intertidal Ecology as listed above are provided in Tables 1 - 2 below.	No response is required.

Table 2-14 The Applicants' Response to Table 1 - Natural England's Advice On: [REP4-015] 6.1 Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 2 of 4 – Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4) (Tracked) [REP5-055]

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-055:C2	General	Natural England welcomes the updates that have been made to incorporate Project Change Request 1 [AS-141], the commitment to bundling of offshore export cables and associated reductions in worst-case parameters relevant to the assessment of Annex I habitats.	To note.	The Applicants welcome Natural England's agreement.
REP5-055:C3	6.4.2.1.1, Para 44	The update to this paragraph in relation to Dogger Bank B seabed recovery is derived from the Applicant's additional submission of 'Review of evidence on recovery of sandbank habitat following habitat damage' [AS-025]. This was reviewed by Natural England at Deadline 2 [REP2-065] with further comments provided at Deadline 4 [REP4-127]. As we have previously advised, impacts from the creation of depressions from UXO clearance or jack-up operations in areas of coarse or mixed sediments should be considered as permanent habitat change/loss, unless it can be otherwise evidenced that they will backfill with similar sediment types. This is particularly important in areas of high potential sandeel spawning habitat, as if craters/depressions infilled with fine sediment they would no longer provide suitable spawning habitat.	We continue to advise that assessed impacts from the creation of depressions from UXO clearance or jack-up operations in areas of coarse or mixed sediments require updating and considered as permanent habitat change/loss (rather than temporary disturbance/damage). [R&I C11].	The total area assumed for permanent habitat loss = 1,815,352m² (see Table 6-3 of **RIAA HRA Part 2 of 4 – Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014] submitted at Deadline 4). **Appendix B - Dogger Bank B Unexploded Ordnance (UXO) Crater Survey Results of Review of Evidence on Recovery of Sandbank Habitat Following Habitat Damage (Revision 2)** [REP3-021] provides the results from several high-order clearances. These show a maximum crater diameter of around 5m. – therefore a crater would be around 20m². As noted in section 5.5.7.4.3 of **Chapter 5 Project Description (Revision 3)** [REP1-009] however, it is expected that 41 UXO would need to be cleared during the construction phase across the entirety of the Offshore Development Area. Assuming all of these occur within the Dogger Bank Special Area of Conservation (SAC) the total footprint would be 820m², adding 0.05% to the assessed footprint. The area of seabed disturbance from jacking-up activities over the Projects lifetime is 306,900m² (see Table 6-3 of **RIAA HRA Part 2 of 4 – Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014] submitted at Deadline 4). This would add 17% to the assessed footprint.

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
				Therefore, if all of the above is considered permanent habitat loss the total footprint would be **2,123,072m²**. The Applicants note that if the Secretary of State (SoS) concludes that habitat disturbance contributes to Adverse Effects on Integrity (AEoI) then the jacking-up footprint would be within the disturbance footprint and therefore already taken into account. Therefore, the footprint of jacking-up should only be added to the permanent habitat loss footprint if a) SoS agrees that this is not a temporary disturbance impact and b) if the SoS agrees with the Applicants that other construction disturbance is temporary and does not contribute to AEoI. In line with the above, the Applicants will update the **RIAA HRA Part 2 of 4 Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014] at Deadline 7 on a without prejudice basis to include depressions from UXO clearance and jack-up operations as permanent habitat loss.
REP5-055:C4	Section 6.4.2.6.1, Para 85 to 93	<u>Halo effects – scour protection</u> Natural England highlights that the Applicant has not considered the likelihood of the colonisation of scour protection as well as turbine foundations, and as a result has based their assessment and prediction of extent of ecological halo on the assumption that scour protection itself would not contribute significantly to an ecological halo. We also highlight that in their assessment, the Applicant has not considered the alteration of predator-prey relations and the contribution of this effect within their assessment of the likely extent of the ecological halo. Natural England point to Danish studies (Dong, 2006[2]), which have identified effects from changes in predator-prey relations around turbines in Danish waters and hypothesised the development of a "feeding halo" around the turbines. These are predicted to occur after the development of a mature biofouling community, which is likely to take in excess of five years. Increased biomass values and their potential exploitation by a range of fish species has also been demonstrated in Egmond aan Zee (Bouma and Lengkeek, 2012 in <u>MMO 1031: Review of environmental data associated with post-consent monitoring of licence conditions of offshore wind farms)</u>. The Applicant has also put forward evidence from Hutchison et al, 2020[3], stating that the study demonstrated that "*operational monitoring shows greatest benthic changes have occurred on or within the footprints of the foundations….*". Whilst this statement acknowledges that some changes were observed beyond the foundation footprint, the Applicant has not described or quantified	We do not agree that all ecological halo effects will fall within the extent of scour protection and advise that the current assessment does not represent a worst-case scenario. We advise that the assessment of extent of ecological halo needs to be updated to consider the likelihood that scour protection itself will become colonised and contribute cumulatively to the ecological halo effect. We also advise that assessments should be updated to consider changes in predator-prey interactions which can be expected to contribute to the ecological halo. Natural England reiterates that a robust assessment is needed of the potential worst-case area of impact on benthic communities within Dogger Bank SAC sandbank feature, and the nature and scale of that impact, as a result of changes to physical and biological processes following the placement of structures and cable/scour protection on the seabed.	The Applicants provided a comprehensive review of the evidence for ecological halo effects at Deadline 5, **Ecological Halo Effects Technical Note** [REP5-041]. This provided more recent evidence representing longer duration studies than those referenced by Natural England. We note Natural England's comments on the applicability of the survey from Moray East being visual only (which was highlighted in the text) but stress that this does provide early evidence of colonisation, deposition etc. The Applicants do not suggest that any such effects would occur within the footprint of scour protection. The points regarding this are 1) the majority of heavy detritus would be deposited in the immediate footprint of turbine towers (i.e. on scour protection as per section 4.1 of the **Ecological Halo Effects Technical Note** [REP5-041]) 2) that the scour protection footprint is already included within the worst case so if not deployed (or less scour protection is deployed) any loss in this location, if it occurs, is already considered within the habitat loss footprint. The **Ecological Halo Effects Technical Note** [REP5-041] considers colonisation of foundations and scour protection both in terms of the literature review and then applied to the Projects (section 4). The Applicants maintain the position that although there may be some change to communities as a result of the presence of infrastructure and subsequent colonisation, the evidence shows that this would be very limited spatially and would not represent a significant change that could be classed as habitat loss. The **Ecological Halo Effects Technical Note** [REP5-041] also considers the evidence for changes to fish communities (i.e. predator prey interactions). The literature review noted that there was the potential for increases in fish within

[2] DONG (2006). Danish offshore WIND - Key Environmental Issues. Dong Energy, Vattenfall, The Danish Energy Authority and The Danish Forest and Nature Agency.
[3] Hutchison, Zoe & Bartley, Monique & Degraer, Steven & English, Paul & Khan, Anwar & Livermore, Julia & Rumes, Bob & King, John. (2020). Offshore Wind Energy and Benthic Habitat Changes: Lessons from Block Island Wind Farm. Oceanography. 33. 58-69. 10.5670/oceanog.2020.406.

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		these further. Natural England also highlight that the Hutchison et al., (2020) study sought to monitor small-scale spatiotemporal changes in dominant biota / biotopes over time at the Block Island Windfarm (BIWF; in the USA) 30 to 90 metres from three turbines 4 years post construction. Hutchison et al., (2020) concluded that: *"The greatest benthic modifications occurred within the footprint of the foundation structures"* but that *"within four years, changes in benthic habitats (defined as biotopes) were observed within the 90 m range of the study, clearly linked to the …colonization of the structures, which also hosted numerous indigenous fish species".* Natural England notes that evidence put forward by the Applicant for lack of ecological halo effects at Moray East had limited grabbing and applied monitoring techniques which are not suitable for detecting ecological halo effects with adequate sensitivity.		wind farms due to reef or refugia effects. This has been hypothesised in Belgium (however this has been in conditions where fishing is not permitted in wind farms by law, therefore there is a possible confounding effect of a lack of fishing affecting abundance rather than the wind farm itself being the cause. As discussed in **Chapter 10 Fish and Shellfish Ecology** [APP-091] (section 10.6.2.5) although there is currently a ban on bottom-towed fisheries within the SAC, there is no barrier to other fisheries operating and therefore any effect of the Projects is unlikely to be detectable above natural variation. Notwithstanding this position, the **Ecological Halo Effects Technical Note** [REP5-041] provides a 'without prejudice' estimate of the potential worst case footprint (see section 5) which could be used should the SoS determine that this is a significant effect. Note that given this area is in the immediate vicinity of the infrastructure, it is coincident with the area that would be disturbed during construction. If the SoS concludes that disturbance is a long-term effect as per Natural England's advice, then the area affected by halo effects would already be accounted for within the compensation.
REP5-055:C5	Section 6.4.2.6.1, Para 92.	<u>Halo effects - biotopes</u> Natural England disagrees that biotopes are simply a statistical construct, this is because in defining a biotope, weighting is given to specific 'characterising species' which cannot be accounted for within statistical analysis without a level of manual interpretation and adjustment, including the application and consideration of environmental data. We further advise that many of the issues highlighted in paragraph 92 are simply effects that would result from the application of poor monitoring strategy and inadequate sampling effort. In contrast to the Applicant's text additions, monitoring reported by Hutchison et al., 2020, as highlighted by the Applicant, allowed for assessments of nearfield spatiotemporal changes in sediment grain size, organic enrichment, and macrofauna within biotopes over multiple monitoring events within an area which can be considered more dynamic and heterogenous than that of Dogger Bank SAC.	In considering the effectiveness and development of post construction monitoring, Natural England advise that recommendations from Hutchison et al., 2020 should be considered, these include: *Addressing how OWFs affect these functions (trophic provisions, biogeochemical processes, and biodiversity) will require careful collection of empirical data at spatiotemporally relevant scales (in order to understand regional importance (Wilding et al., 2017). Consideration of the functional changes over the life of an OWF will require data collection over a longer timeframe and a broader spatial scale, partnered with suitable pre-OWF comparisons, and further should incorporate analyses of cumulative effects (Wilding et al., 2017; Willsteed et al., 2017).*	The **Ecological Halo Effects Technical Note** [REP5-041] provides evidence from a range of sources showing a variety of results, however it is worth highlighting that results depended on the location, sediment type, structure type etc. The European evidence, from locations similar to the Dogger Bank do not show the significant changes postulated by Natural England. The Applicants maintain the position that although there may be some change to communities as a result of the presence of infrastructure and subsequent colonisation, the evidence shows that this would be very limited spatially and would not represent a significant change that could be classed as habitat loss. The Applicant acknowledge that there is an evidence gap relating to potential effects in UK waters. The Applicants consider that the correct approach to this knowledge gap is to address it through carefully designed survey and monitoring as included in the **In Principle Monitoring Plan (Revision 4)** [REP5-027] and referred to in section 6 of the **Ecological Halo Effects Technical Note** [REP5-041].
REP5-055:C6	Section 6.4.2.6.1, Para 93 and 94	<u>Halo effects - biotopes</u> As advised at Deadline 4 [REP4-127], Natural England does not agree that changes to biotopes as a result of a halo effect would not represent a loss of extent of Annex I sandbank. We highlight that the Applicant acknowledges it is likely that there will be a *"change from one Annex 1 sandbank biotope to another Annex 1 sandbank biotope"* but that they do not consider this would represent a loss of Annex 1 habitat. However, the Supplementary Advice on the	Please see point 3 above. [R&I C8]	Section 4.2.1 of the **Ecological Halo Effects Technical Note** [REP5-041] highlights the variability of biotopes across the Dogger Bank SAC (as evidenced from the baseline characterisations of the EIAs conducted for windfarms). All of these constitute the 'characteristic communities' of the SAC so a change from one characteristic community to another, if detectable, would not represent a significant change to the SAC unless occurring on a large spatial scale. The evidence presented in section 4.1 of [REP5-041] does not support such change being significant a) ecologically or b) spatially.

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		Conservation Objectives for Dogger Bank SAC[4] for the Conservation Objective (CO) 'Biological Structure: Characteristic communities' states that "*Characteristic communities are ones associated with established biological communities (biotopes) that form the feature*", and therefore a change in biotope would represent the CO being taken further away from its restore objective.		
REP5-055:C7	Section 6.5.1.1, para 141	The Applicant has updated the document stating that there is no interaction of concern between the feature 'Vegetated sea cliffs of the Atlantic and Baltic Coasts' and the potential pressures associated with the Project.	Natural England is in agreement with this.	The Applicants welcome Natural England's agreement.
REP5-055:C8	Section 6.6.2.1.1 Para 170	The Applicant has updated the document that as a result of the Project Change Request 1 there is no longer any pathway for effect for sediment transport resulting from construction works in the intertidal environment.	Natural England welcomes this being updated in the RIAA. [R&I C35]	The Applicants welcome Natural England's agreement and direct Natural England to the **RIAA HRA Part 2 of 4 Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014] submitted at Deadline 4.
REP5-055:C9	Appendix D	As summarised at Deadline 4 [REP4-129], Natural England welcomes the further characterisation of benthic receptors at a suitable resolution and more transparent consideration of the sensitivity and recoverability of designated benthic receptors to the identified pressure pathways within the ZoI. We consider this aspect of the issue to be resolved. However, we maintain our previous advice with regards to the valuing of other receptors, particularly those which contribute to Annex I feature and will be subject to permanent loss/change and therefore for which sensitivity cannot be used to downgrade overall value as per the Applicants outlined methods (this is because all subtidal sediment communities are highly sensitive to loss/change).	We advise that updates to ES documents are conducted accordingly. [R&I C7] In order to provide further advice, Natural England requires additional information to explain how the Applicant has arrived at the receptor values stated. We would question that if permanent loss/change of an Annex I feature does not warrant a high value being attributed to that receptor, then in what scenario would the Applicant consider a receptor high value? [R&I, C9]	The Applicants maintain that in this case the value of Annex 1 habitat is intrinsically considered as part of the HRA process. As far as the EIA is concerned boundaries of designated sites are not relevant. If in the EIA, receptors are accorded higher sensitivity based on value and not ecological sensitivity, this strays into the HRA. Where value could be used, for example, would be if there was a Habitat or Species of Principal Importance outwith a designated site which would not be otherwise captured within the HRA or MCZA process.

Table 2-15 - The Applicants' Responses to Table 2 - Natural England's Advice On: [REP4-019] 6.2 Habitats Regulations Derogation Provision of Evidence (Revision 3) (Tracked) & [REP4-029] 6.2.3 Report to Inform Appropriate Assessment - Habitats Regulations Assessment - Appendix 3 - Project Level [REP5-055]

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-055:C10	6.2 - Section 4.3.3.2.2 Para 90. 6.2.3 – Section	Halo effects Natural England disagrees that "there is no evidence to substantiate that there could be AEoI from 'halo effects' in habitats such as those found within the Dogger Bank". Whilst we agree there is no established methodology for determining the extent of such an effect (highlighting the importance of evidence gathering post-construction via the IPMP), Natural England considers	Please see point 3 and 5 in Table 1 above. [R&I C8]	The Applicants provided a comprehensive review of the evidence for ecological halo effects at D5 **Ecological Halo Effects Technical Note** [REP5-041]. This includes 'without prejudice' potential ranges and extents of habitat loss which will allow SoS to determine the extent of AEoI should they agree that there is an effect which requires consideration. The Applicants maintain the position that although there may be some change to communities as a result of the presence of infrastructure and subsequent colonisation, the evidence shows that this

[4] https://data.jncc.gov.uk/data/2665af8d-271e-403d-8a6b-200defcabcb1/dogger-bank-saco-v2.pdf

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
	4.2.1.1 para 97	that there is sufficient literature and evidence available to determine a worst-case scenario of extent for changes to biological structures within the Annex I sandbank which would contribute to an AEoI.		would be very limited spatially and would not represent a significant change that could be classed as habitat loss. The **Ecological Halo Effects Technical Note** [REP5-041] provides a 'without prejudice' estimate of the potential worst case footprint (see section 5) which could be used should the SoS determine that this is a significant effect. Note that given this area is in the immediate vicinity of the infrastructure, it is coincident with the area that would be disturbed during construction. If the SoS concludes that disturbance is a long-term effect as per Natural England's advice, then the area affected by halo effects would already be accounted for within the compensation.

Table 2-16 - The Applicants' Responses to Table 3 - Natural England's Advice On: [REP4-053] 8.23 In Principle Monitoring Plan (Revision 3) (Tracked) [REP5-055]

NE Ref	Section	Key Concern and / or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-055:C11	1.6.4	Natural England welcomes the Applicant's inclusion of the NE-JNCC benthic monitoring objectives for Dogger Bank SAC, monitoring for habitats of principle importance, and invasive non-native species and colonisation of introduced substrate.	To note.	The Applicants welcome Natural England's agreement.

2.8 Natural England - Appendix E5 Fish and Shellfish

Table 2-17 – The Applicants' response to Natural England's Appendix E5 to the Natural England Deadline 5 Submission Natural England's comments and updated advice on Fish and Shellfish [REP5-056]

I.D.	Natural England's Response	Applicants' Response
REP5-056: E0	In formulating these comments, the following documents submitted by the Applicant have been considered in relation to the impacts of Dogger Bank South (East and West) Offshore Wind Farm (DBS) on Fish and Shellfish: • [REP4-094] 14.9 Illustrative Underwater Noise Reduction Technical Note • [REP4-053] 8.23 In Principle Monitoring Plan (Revision 3) • [REP4-093] 14.8 Effects on Prey Species Technical Note • [REP4-088] 14.4 The Applicants' Responses to Deadline 3 Documents • [REP4-086] 14.2 The Applicants' Written Summaries of Oral Submissions made at CAH2, ISH3, ISH4 and ISH5. • [EV10-002] Action Points from Issue Specific Hearing 5 (ISH5) held on 10 April 2025 • [PD-022] The Examining Authority's Second Written Questions (ExQ2) Our detailed comments on documents submitted by the Applicant in relation to Fish and Shellfish as listed above are provided below.	No response is required.
REP5-056: E1	**Illustrative Underwater Noise Reduction Technical Note** Natural England welcomes the Applicant's submission of the Illustrative Underwater Noise Reduction Technical Note [REP-094]. We have provided comments below based on the information included within the technical note, however we request that the underwater noise modelling report which supports the note is also provided for review. [REP4-094] indicates that if a 10 dB reduction in underwater noise (UWN) was achieved through primary or secondary mitigation, "the temporary threshold shift boundary would move entirely outside of regions of potential herring spawning" and "remove the risk of noise impacts to herring utilising the main Banks herring population spawning ground during their spawning season" using the Applicant's preferred 186 dB behaviour threshold. Natural England disagrees with the use of the 186 dB behaviour threshold, however a reduction of 80.91% is still achieved with use of the advised 135 dB behaviour threshold. This is welcome and would represent a significant reduction in impacts, however the Applicant also states that they "will not be committing to any specific secondary noise reduction methods until the final design parameters, including all relevant primary measures, are finalised post consent". Natural England accepts this and does not expect the Applicant to commit to specific secondary noise reduction methods. Instead, we suggest that the Applicant could commit to achieving a 10 dB reduction in UWN during construction from levels predicted in the environmental assessment via primary and/or secondary mitigation, with the exact systems and/or technologies to be determined post-consent. Natural England note that the Applicant has referred to the Rampion 2 Offshore Windfarm in their responses to the Deadline 3 Documents [REP4-088]. We would like to highlight that during the Rampion 2 Examination, the Applicant committed to securing a 15 dB reduction	The Applicant acknowledges this comment. The **Modelling of underwater noise associated with alternative piling locations to inform potential impacts on Atlantic Herring spawning grounds** [REP5-042] technical note contains figures relating to the alternative piling location both with and without mitigation leading to a 10dB reduction and was submitted at Deadline 5. It is noted that the inshore region of the potential herring spawning map is overlaid with part of the figure legend, however as this falls outside of the 135dB (greatest extent) no revisions are intended. Information presented within this section of the figure is available within the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105]. The Applicants maintain their position that a noise restriction for impacts upon herring is not required for the Projects given that no likely significant impacts have been identified in relation to this matter as part of the comprehensive Environmental Impact Assessment (EIA) that has been undertaken. Notwithstanding this, the Applicants, are continuing to engage with MMO and Cefas on a 'without prejudice' basis to identify areas of common ground in relation to the matter.

I.D.	Natural England's Response	Applicants' Response
	through the use of NAS, which significantly reduced the underwater noise impacts of the project on black seabream in the Kingmere MCZ. We also note that the Applicant will be submitting modelling of piling in the most south-westerly point of DBS West Array Area at Deadline 5 [REP4-088]. Should the Applicant commit to a 10 dB reduction, we consider it would be beneficial to incorporate the modelling of the 10 dB reduction into any future iterations of assessments. Natural England would like to bring to the Applicant's attention that Figure 3-1 is currently obstructed by the map key, which is placed on an area of Herring spawning.	
REP5-056: E2	**Habitat loss and disturbance in reference to the Fish Study area** Whilst we welcome the Applicant's calculations of percentages of habitat loss in relation to the fish assessment in the Response to Deadline 3 Documents [REP4-088], we advise that these are included in updated assessments, alongside comparisons to both existing and proposed cumulative impacts occurring within any overlapping developments such as aggregates, oil and gas, cables and pipelines. This is in order to align calculations with the Applicant's current cumulative impacts from other Offshore Wind Farms (currently outlined in 6.1.2 Appendix B - Sandeel Habitat Potential in the Dogger Bank SAC and Southern North Sea SAC [APP-050]). Natural England previously advised this at Deadline 3 [REP3-053] in relation to herring spawning along the ECC route, but advise that all cumulative impacts are presented for both herring and sandeel; this is particularly important given the changes shown in the heat mapping report [AS-105]. We also refer the Applicant to our comments in Appendix C5 of our Deadline 5 submission in relation to habitat loss resulting from ecological halo effects, UXO clearance and jack-up operations, that could also affect spawning habitat for both herring and sandeel.	Where values provided within this response supersede those given within assessment of **Chapter 10 Fish and Shellfish Ecology** [APP-091], values will be replaced and updated as appropriate, and any potential changes to determined impact will be discussed within the next revision of **Chapter 10 Fish and Shellfish Ecology** [APP-091] to be submitted at Deadline 7.
REP5-056: E3	**Heat impacts on sandeel** The Applicant has stated in section 10.6.2.7 of Chapter 10 Fish and Shellfish Ecology [APP-091] that 'Localised heating of sea water' was assessed as part of the scoping, whilst their response to ISH5 Action point 27 [REP4-086] states *'While the heating of sediment is something that is known and acknowledged, the distance over which or the volume of sediment that would be heated is considered to be less than that of EMF, the impacts of which have been assessed and are considered to be negligible. As such, there is no adverse effects.'.* Natural England consider EMF to be a separate impact pathway to that of heat impacts from cables, and therefore requests that the Applicant provides evidence to support their statement that the impact area for heat impacts will be less than that for EMF, and that the dissipation radius of heat produced by cables will not interact with sediment areas used by sandeel for spawning or burrowing. Further, the Applicant highlights in [REP4-086] *'conditions 22 of DMLs 1 and 2, Schedules 10 and 11 of the Draft DCO (Revision 7) [document reference: 3.1] require post-construction*	As stated within 10.6.2.7 of **Chapter 10 Fish and Shellfish Ecology** [APP-091] *"Localised heating of sea water may occur, but this is limited to distances of tens of cm, and is likely to be of small magnitude, therefore no additional impact is predicted from heating effects (Boehlert and Gill, 2010[5]; Moray Offshore Windfarm Ltd, 2018[6]).".* Even when considering lab based studies, heat transfer around subsea cables, under optimal heat transfer conditions, are shown to be limited to an order of meters in sediments of maximum permeability. Sediment of lower permeability limited heat transfer effects to approximately 40cm (Emeana *et al.*, 2016[7]). Assumptions made for the potential impacts of Electromagnetic Field (EMF) assume a 4m radius, with findings indicating a negligible effect, which is not significant in EIA terms. Whilst it is evident that the cable route will pass through regions suitable for sandeel potential, any change in sediment temperature will be limited to the area immediately surrounding the cable and thus, it can be reasonable to assume that there would be no likely significant effects as a result. As such, the Applicants do not consider it necessary to include validation of heat impacts into the monitoring proposed under conditions 22 of DMLs 1 and 2.

[5] Boehlert, G.W., and Gill, A.B. (2010). Environmental and ecological effects of ocean renewable energy development: a current synthesis. Oceanography, 23, pp. 68-81
[6] Moray Offshore Windfarm (West) Limited (2018). Moray West Offshore Windfarm Offshore EIA Report, Chapter 1 Introduction. Available at: https://marine.gov.scot/sites/default/files/00538033.pdf (Accessed: Feb 2023).
[7] Emeana, C. J., Hughes, T. J., Dix, J. K., Gernon, T. M., Henstock, T.J., Thompson, C.E.L., and Pilgrim, J.A. (2016). The thermal regime around buried submarine high-voltage cables, Geophysical Journal International, 206, pp 1051–1064

I.D.	Natural England's Response	Applicants' Response
	monitoring to occur, which would include monitoring of habitat suitability for sandeel'. Natural England welcomes this monitoring and advises that if evidence cannot be provided to support the above assessment, that validation of heat impacts is incorporated into this monitoring. In reference to the Applicant's statement that heating of sediment has not previously been raised, this issue was highlighted in Natural England's Relevant Representation [RR-039], point E20.	
REP5-056: E4	**Effects on Prey Species Technical Note** Whilst Natural England welcome the provision of [REP4-093], we disagree that indirect effects on predator species from prey impacts have been adequately assessed and can be ruled out. We note that the Applicant's arguments have centred around two key points: 1) that if there are no impacts on prey species at an EIA/population scale that there will be no impacts on predatory species at a HRA scale, and 2) that as predatory species such as birds and marine mammals are mobile animals, they will be able to find prey resources elsewhere. Natural England consider these arguments to oversimplify the case and advise that the current assessment is insufficient to advise that impacts on Annex I ornithology receptors at FFC SPA and Annex II harbour porpoise in SNS SAC, in relation to conservation objectives for the distribution, abundance and availability of key food and prey items to be restored (FFC SPA) or maintained (SNS SAC) can be excluded. Natural England recommend that further discussion and consideration occurs regarding the complex relationships between predators, prey and offshore industry. The following information, for example, should be taken into consideration when predicting the impacts of the project on prey species:	1) The Applicants do not argue that there are no effects on prey species in either the EIA or Habitats Regulations Assessment (HRA). Direct effects on prey species have been assessed in the EIA and found to be non-significant and these effects have been carried through to assessments of the predators for both EIA and HRA. The Applicants highlight that with regard to the HRA it was not just the Applicants' conclusion that prey effects did not lead to adverse effect on integrity. These effects were assessed in the Plan Level HRA and not considered beyond the primary assessment (this was detailed previously in section 6 of the Effects on **Prey Species Technical Note** [REP4-093]. 2) The Applicants do not contest that birds and mammals are foraging within the Dogger Bank Special Area of Conservation (SAC) and Southern North Sea SAC but highlight that the areas of the SAC affected are small – even relative to the scale of the Offshore Development Area - and must be considered in the context of the wider prey resource available beyond the SAC boundaries. The Applicants have updated the **Effects on Prey Species Technical Note (Revision 2)** [document reference 14.8] to provide additional information as requested by Natural England. As per the discussion at the meeting with Natural England on 7th May 2025 this additional information is provided for information only, the assessments have not been updated.
REP5-056: E4.1	Harbour Porpoise There are several studies which have evidenced the importance of sandeels and clupeids (for example, herring) for harbour porpoise. Gilles *et al.* (2016)[1] found harbour porpoise density increases with decreasing distance to sandeel grounds, and recent research, by Ransijn *et al.* (2021[8]) has shown that sandeel are a preferred prey for harbour porpoise. This preference is likely to be driven by the quality of prey; sandeels and clupeids are high in fat and therefore, a decrease in their population numbers could require porpoise to increase the amount of other prey they are consuming in order to meet energetic requirements (Ransijn et al, 2021[9]). Leopold (2015[10]) demonstrated that harbour porpoise in better body condition had higher amounts of fatty fish, such as sandeel, in their stomachs.	The Applicants acknowledge the important link between harbour porpoise distribution, ranges and feeding grounds with the main prey species being sandeels and clupeids. Distribution of harbour porpoises is thought to be prey driven and it is likely that the high densities of harbour porpoises that occur at the Dogger Bank are due to a particularly rich area for feeding (Ransijn *et al*. 2021[8]). Important harbour porpoise prey also includes cod (Gadus morhua), whiting (*Merlangius merlangus*) and sprat (*Sprattus sprattus*). Sprats are also high in fat, therefore a good quality of prey. All of these prey species are present within the wider Dogger Bank area and Southern North Sea. A southward shift in distribution of harbour porpoise is supported by data from smaller scale surveys in the Southern North Sea which show increasing numbers of porpoises and aggregations in French, Belgian, Dutch and German

[8] Gilles, A., Viquerat, S., Becker, E. A., Forney, K. A., Geelhoed, S. C. V., Haelters, J., Nabe-Nielsen, J., Scheidat, M., Siebert, U., Sveegaard, S., van Beest, F. M., van Bemmelen, R., & Aarts, G. (2016). Seasonal habitat-based density models for a marine top predator, the harbor porpoise, in a dynamic environment. Ecosphere, 7, e01367. [redacted]

[9] Ransijn, J. M., Hammond, P. S., Leopold, M. F., Sveegaard, S., & Smout, S. C. (2021). Integrating disparate datasets to model the functional response of a marine predator: A case study of harbour porpoises in the southern North Sea. Ecology and Evolution, 11, 17458–17470. h[redacted]

[10] Leopold, M. F. (2015). Eat and be eaten. Porpoise diet studies. PhD thesis. Wageningen University, The Netherlands.

I.D.	Natural England's Response	Applicants' Response
	Furthermore, recent publication from the PrePared project has identified that installation of wind turbines has resulted in a modified predator-prey interaction, with a weaker relationship between porpoises and sandeel density (Fernandez-Betelu *et al.* 2024[11]).	waters (e.g., Gilles *et al.* 2011[12], 2016[8]; Haelters *et al.* 2011[13]; Scheidat *et al.* 2012[14]; Peschko *et al.* 2016[15]; Laran *et al.* 2017[16]; Nachtsheim *et al.* 2021[17]). This shift in harbour porpoise distribution is probably related to changes in prey distribution and abundance (Hammond *et al.* 2013[18]). Data from SCANS-III in 2016 and the recent SCANS-IV survey in 2022 confirm that the shift to the south has been maintained (Hammond *et al.* 2021[19]; Gilles *et al.* 2023[20]). There is already a documented shift in harbour porpoise distribution likely due to prey availability. As such, the Applicants maintain their position that the Projects effects are not likely significant impacts as part of the comprehensive Environmental Impact Assessment that has been undertaken. The Applicants note that Natural England's comment does not include any further request to amend the assessment or advice on additional information required. No updates are therefore proposed to be made to the assessments.
REP5-056: E4.2	<u>Ornithology</u> Whilst seabirds are mobile animals, their distributions during the breeding season are constrained as central-place foragers to areas within foraging range, and their distribution is also strongly affected by the availability of prey (Evans et al 2021[21], de la Cruz et al 2022[22], Legard et al 2025[23]); seabirds are known to aggregate in areas where prey availability is high (Oppel et al 2018[24]). The Projects are located within the Dogger Bank SAC, in an area that is important for sandeel (Dunn 2021[25], Langton 2021[26]) and therefore likely to attract seabirds breeding at FFC SPA (see also response to OR1.5 and OR 1.6 [REP3-057]). Furthermore, sandeel are a relatively sedentary species that show limited mobility and are strongly	The Applicants acknowledge the important links between seabirds and feeding grounds with the main prey species being sandeels and clupeids. Seabirds present within the Array Areas are primarily there for foraging, however, as previously stated the Array Areas do not represent the only available foraging grounds for seabirds. The updated **Effects on Prey Species Technical Note (Revision 2)** [document reference 14.8] provides mapping showing foraging ranges of the key species (kittiwake, guillemot and razorbill) together with 'hotspot mapping for these species based on Cleasby *et al.* (2019) and further information on kittiwake from Wischnewski *et al.* (2017). In

[11] Fernandez-Betelu, O., Iorio-Merlo, V., Graham, I. M., Benhemma-Le Gall, A., Cheney, B.J., Payo-Payo, A., Thompson, P.M. (2024). PrePARED Task 4.1 – Using modelled sandeel distribution maps to characterise spatio-temporal variation in the occurrence and foraging behaviour of harbour porpoises around offshore windfarms. PrePARED Report, No. 001. March 2024

[12] Gilles, A., Adler, S., Kaschner, K., Scheidat, M., Siebert U. (2011). Modelling harbour porpoise seasonal density as a function of the German Bight environment: implications for management. Endangered Species Research 14: 157-169

[13] Haelters, J., Kerckhof, F., Jacques, T. G., Degraer, S. (2011). The harbour porpoise *Phocoena phocoena* in the Belgian part of the North Sea: trends in abundance and distribution. Belgian J. Zool. 141, 75–84.

[14] Scheidat, M., Verdaat, H., Aarts, G. (2012). Using aerial surveys to estimate density and distribution of harbour porpoises in Dutch waters. J. Sea Res. 69, 1–7. doi: 10.1016/j.seares.2011.12.004

[15] Peschko, V., Ronnenberg, K., Siebert, U., and Gilles, A. (2016). Trends of harbour porpoise (*Phocoena phocoena*) density in the southern North Sea. Ecol. Indic. 60, 174–183. doi: 10.1016/j.ecolind.2015.06.030

[16] Laran, S., Authier, M., Blanck, A., Doremus, G., Falchetto, H., Monestiez, P., Pettex, E., Stephan, E., Van Canneyt, O., Ridoux, V. (2017). Seasonal distribution and abundance of cetaceans within French waters- Part II: The Bay of Biscay and the English Channel. Deep Sea Research Part II: Topical Studies in Oceanography 141, 31-40. https://doi.org/10.1016/j.dsr2.2016.11.012

[17] Nachtsheim, D., Viquerat, S., Ramirez-Martinez, N.C., Unger, B., Siebert, U., Gilles, A. (2021). Small cetaceans in a human high-use area: Trends in harbour por-poise abundance in the North Sea over two decades. Frontiers in Marine Science. Frontiers in Marine Science 7:606609. doi: 10.3389/fmars.2020.606609

[18] Hammond, PS, Macleod, K, Berggren, P, Borchers, DL, Burt, ML, Cañadas, A, Des-portes, G, Donovan, GP, Gilles, A, Gillespie, D, Gordon, J, Hedley, S, Hiby, L, Kuklik, I, Leaper, R, Lehnert, K, Leopold, M, Lovell, P, Øien, N, Paxton, CGM, Ridoux, V, Rogan, E, Samarra, F, Scheidat, M, Sequeira, M, Siebert, U, Skov, H, Swift, R, Tasker, ML, Teilmann, J, Van Canneyt, O, Vázquez, JA. (2013). Cetacean abundance and distribution in European Atlantic shelf waters to inform conservation and management. Biological Conservation 164: 107-122

[19] Hammond P, Lacey C, Gilles A, Viquerat S, Börjesson P, Herr H, Macleod K, Ridoux V, Santos MB, Scheidat M, Teilmann J, Vingada J, Øien N. 2021. Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys – Revised version (June 2021). https://scans3.wp.st-andrews.ac.uk/files/2021/06/SCANS-III_de- sign-based_estimates_final_report_revised_June_2021.pdf

[20] Gilles, A., Authier, M., Ramirez-Martinez, N.C., Araújo, H, Blanchard, A., Carl-ström, J., Eira, C., Dorémus, G., Fernández-Maldonado, C., Geelhoed, S.C.V., Kyhn, L., Laran, S., Nachtsheim, D., Panigada, S., Pigeault, R., Sequeira, M., Sveegaard, S., Taylor, N.L., Owen, K., Saavedra, C., Vázquez-Bonales, J.A., Unger, B., Hammond, P.S. (2023). Estimates of cetacean abundance in Eu-ropean Atlantic waters in summer 2022 from the SCANS-IV aerial and ship-board surveys. Final report published 29 September 2023. 64 pp. https://www.tiho-hannover.de/en/clinics-institutes/institutes/institute-for-terrestrial-and-aquatic-wildlife-research-itaw/scans-iv-survey

[21] Evans, R., Lea, M.A. and Hindell, M.A., 2021. Predicting the distribution of foraging seabirds during a period of heightened environmental variability. Ecological Applications, 31(5), p.e02343.

[22] de la Cruz, A., Ramos, F., Tornero, J., Rincón, M.M., Jiménez, M.P. and Arroyo, G.M., 2022. Seabird distribution is better predicted by abundance of prey than oceanography. A case study in the Gulf of Cadiz (SW, Iberian Peninsula). ICES Journal of Marine Science, 79(1), pp.204-217.

[23] Legard, M.J., Lescure, L. and Davoren, G.K., 2025. Individual consistency in foraging behaviour is influenced by prey availability in a breeding seabird. Marine Biology, 172(6), pp.1-16.

[24] Oppel, S., Bolton, M., Carneiro, A.P., Dias, M.P., Green, J.A., Masello, J.F., Phillips, R.A., Owen, E., Quillfeldt, P., Beard, A. and Bertrand, S. 2018. Spatial scales of marine conservation management for breeding seabirds. Marine Policy, 98, 37–46

[25] Dunn, E. 2021. Revive our Seas: The case for stronger regulation of sandeel fisheries in UK waters. RSPB Report. Available at: [redacted]

[26] Langton, R., Boulcott, P. and Wright, P. 2021. A verified distribution model for the lesser sandeel Ammodytes marinus. Marine Ecology Progress Series 667, 145–159

I.D.	Natural England's Response	Applicants' Response
	associated with discrete areas of particular sediment types (van der Kooij et al 2008[27], Jensen et al 2011[28]). Van der Kooij et al. (2008[27]) demonstrated that, during their daily movements, sandeel in the Dogger Bank remained within a few kilometers of the substrate in which they burrow overnight. Areas within the Dogger Bank with high abundance of sandeels are therefore likely to represent a consistent source of food for foraging seabirds. However, this oversimplifies the case and overlooks the fact that whilst they could forage elsewhere, they are choosing to forage in this location.	addition, the Applicants have also included mapping showing the updated heat mapping for both herring and sandeel (in line with the Kyle-Henney *et al.* (2024[29]) methodology). The mapping presented in this report clearly shows that sandeel spawning are widespread across the Southern North Sea outwith the boundaries of the Dogger Bank SAC. In terms of herring, the Dogger Bank SAC is not particularly important for spawning with this mostly occurring more inshore and along the coast and south towards the Thames. Following discussions with Natural England on 7th May the Applicants have presented mapping in this updated report showing the foraging ranges of the key species of concern (i.e. kittiwake, guillemot and razorbill), the hotspot mapping from Cleaby *et al.* (2020) and the above-mentioned mapping of potential spawning areas. Together these demonstrate the point made previously that whilst seabirds are foraging in the Array Areas, prey resource is widespread throughout their foraging range and hotspot modelling suggests that locations outwith the Array Areas are of greater importance for these species. The Applicants note that Natural England consider that assessment undertaken is simplistic however we point out that: • Where birds are subject to displacement effects (such as razorbill, guillemot and gannet), the mortality from this is assumed to result from a reduction in access to prey. So, in this case, consideration of any indirect effects via effects on prey is double counting to some degree (e.g. the birds are already displaced from the Array Areas so effects on prey within these locations have no additional effect). • For birds not displaced, such as kittiwake and the residual auks (under Natural England's preferred displacement rate 70% are displaced so only 30% remain), the area which can no longer be used for foraging is confined to the immediate footprint of the infrastructure within the Array Areas (and within the Export Cable Corridor small sections of cable protection) which is permanently lost. In addition to this there are direct effects on the prey themselves (disturbance, noise impacts etc) which is what has been assessed in **Chapter 10 Fish and Shellfish Ecology** [APP-091]) and cross referenced within the ornithology assessment (**Chapter 12 Offshore Ornithology (Revision 4)** [document reference: 7.12] and **RIAA HRA Part 4 of 4 (Revision 5)** [document reference: 6.1]) • Therefore, the assessment has covered all the potential pathways for impacts. These were assessed in line with standard practice in the Application, with the steps set out in this document. The Applicants note that Natural England's comment does not include any further request to amend the assessment or advice on additional information required. No updates are therefore proposed to be made to the assessments.
REP5-056: E4.3	<u>Sandeel</u> Natural England continue to disagree with the Applicant's conclusion that impacts on sandeel and herring are low to negligible. Whilst Natural England agree that significant EIA and/or North Sea scale population level impacts on herring and sandeel are unlikely, we consider that localised impacts cannot be ruled out. We note that the Applicant has highlighted that sandeel '*is not relevant to the boundaries of the [Dogger Bank] SAC which was designated on the basis of bathymetry and benthic communities*.'. Natural England do not argue that the Dogger Bank SAC was designated due to the presence of sandeel, however as detailed in the	**Data on relative abundance/population distribution of sandeel** As has been stated throughout the consultation period, confidence in the accuracy of sandeel abundance data (including the NSSS) is inherently limited by survey equipment and the poor resolution at a project-specific scale. The Applicants have included NSSS data in their responses throughout the consultation period via presence/absence at sample stations, rather than the abundance value at the sample stations. This enables NSSS data to be aligned (not included) with the Reach *et al.* (2024) heat mapping methodology used to inform the location of potential supporting habitat for sandeel.

[27] van der Kooij, J., Scott, B.E. and Mackinson, S., 2008. The effects of environmental factors on daytime sandeel distribution and abundance on the Dogger Bank. Journal of Sea Research, 60(3), pp.201-209.
[28] Jensen, H., Rindorf, A., Wright, P.J. and Mosegaard, H., 2011. Inferring the location and scale of mixing between habitat areas of lesser sandeel through information from the fishery. ICES Journal of Marine Science, 68(1), pp.43-51.
[29] Kyle-Henney, M., Reach, I., Barr, N., Warner, I., Lowe, S., and Lloyd Jones, D. (2024). Identifying and Mapping Atlantic Herring Potential Spawning Habitat: An Updated Method Statement. Available at:

I.D.	Natural England's Response	Applicants' Response
	Supplementary Advice on the Conservation Objectives (SACO) for the site (JNCC, 2022[30]), sandeel form part of the Characteristic Communities relevant to the Biological Structure and Function in certain areas of the site, and particularly along the Western side where the Projects are located. The SACOs highlight that "T*he presence of sandeels, and consequently characteristic predator species [black-legged kittiwake and harbour porpoise], show that Dogger Bank supports species of wider importance across the North Sea and is an important area for connectivity across the MPA network*", and whilst some fish species migrate to the site as feeding and nursery grounds "*others are more resident e.g. sandeels (Scottish Natural Heritage and JNCC, 2012[31]) making the conservation of sandbanks important as a source of food for important commercial species and other species such as seabirds and marine mammals*". We would also like to direct the Applicant to the recent final ruling on the sandeel case from the Permanent Court of Arbitration[32], where the evidence presented by the UK government[33] shows sandeel localised dispersal ranges (<100km), predator foraging ranges and how environmental factors, such as changes in temperature, can impact recruitment. This evidence also demonstrates a number of clear links between sandeel and their importance as a prey species for both ornithological and marine mammal predator species. In addition to the aspects detailed above for ornithology and marine mammals, we consider that the following outstanding elements of our previous advice should be addressed in relation to localised impacts on sandeel and herring to inform this assessment. • Data on relative abundance/population distribution of sandeel within the project area compared to wider region. It is our understanding that abundance indices are available from the North Sea Sandeel Survey (NSSS) data set and would help to support the assessment of sandeel suitability. Whilst the Applicant has previously provided a figure of the NSSS data [REP3-028], there was no presentation of data on relative abundance/population distribution within the project area compared to the wider region (R&I ref. E5). • Assessment for localised heating of sediment and possible impacts to high/very high potential sandeel and herring spawning habitat (See Section 3, R&I ref. E8 & ISH Action No.27). • Localised impact assessments, e.g. localised depletion and/or reduced resilience of the wider stock. This should include an assessment of the worst-case area of high potential spawning habitat loss due to cable/scour protection and UXO clearance. The assessments should consider both direct and indirect impact pathways to sandeel and herring at a biologically relevant population scale, for both the construction and operation phases of the Projects. (R&I ref. E7, E9, E10, E21 & ISH Action No.28, 37 & 57)	Furthermore, there is limited information available within the public domain that describes the exact method of data collection within the NSSS. It is understood that **the total number of sandeel caught within each sample is not recorded** but extrapolated from a subset of the sample used to collect biometric information (e.g. age class, length, weight, etc). Therefore, the Applicants maintain that the inclusion of the NSSS data to support the presence/absence OneBenthic data layer used in the heat mapping methodology is the most appropriate use of the NSSS data. If it were the case that NSSS data was available at sufficient resolution within the Offshore Development Area, (such as the resolution provided by the environmental survey to characterise the distribution of sediment) it would be more appropriate to extract abundance data for the purposes of characterising variation in the size of the stock. In the absence of this resolution, the NSSS has been included in a manner that maximises confidence in the data it portrays. NSSS abundance data has been explored on the DATRAS/ICES Data Portal, however no way to investigate these data as requested appears available. Whilst the dataset can be downloaded, spatial and abundance data are provided as separate files, with no way to match them. As a result, any abundance data relates to the entire North Sea area, presented within the indicative data extent window as reaching from the UK all the way to territorial waters of the Netherlands, Germany, Denmark, and Norway. As a result, any investigation of abundance data is not considered fit for purpose as it is currently available. Further, the MMO state in REP5-049: 1.7.2 that they *"do not believe the presentation of this data at this late stage in the application processs will significantly change the outcomes of the assessment".* It must be restated that, even in the absence of North Sea Sandeel Survey (NSSS) data, sandeel were assumed to have been present across the whole of the Offshore Development Area based on Reach *et al*. (2024) methodology heat mapping (i.e. the potential for spawning habitat is used as a proxy for sandeel presence, which is a worst case assumption). Whilst examination of NSSS data confirms this finding, it does not change any assessment made throughout the ES. This is clarified within REP2-061:19 where it is stated that *"the inclusion of NSSS would not add benefit to the assessment or change the conclusions of the **Heat Mapping Report** [AS-105]. Furthermore, sandeel were originally considered to be present within the Array Areas and assessed as such within the Environmental Impact Assessment (EIA), and therefore the addition of NSSS data would not alter the original EIA conclusions made within the ES."* **Localised heating of the sediment** This has been assessed, see the response to REP5-056: E3 above. **Localised impact assessments** The worst case assessment for habitat loss has been undertaken for EIA and HRA in terms of the worst case footprint of infrastructure. Where this habitat loss relates to sandeel, the assessment is based on the assumption that ***any potential*** sandeel spawning habitat is indeed sandeel spawning habitat. This is conservative as not all of this habitat will actually have sandeel present. Note that all of the seabed within the Array Areas is of high potential for spawning. For example, the **Report to Inform Appropriate Assessment Habitats Regulations Assessment Part 2 of 4 Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014] presents this in section 6.4.2.6.1 Physical change (to another seabed / sediment type). Note that footprint was only based upon the footprint of infrastructure

[30] https://data.jncc.gov.uk/data/26659f8d-271e-403d-8a6b-300defcabcb1/dogger-bank-conservation-objectives-v2.pdf
[31] https://sac.jncc.gov.uk/habitat/H1110/
[32] [redacted]
[33] The United Kingdom's Written Submission https://pcacases.com/web/sendAttach/67188

I.D.	Natural England's Response	Applicants' Response
		which will be above the seabed (foundation and cable/scour protection). Natural England considered that disturbance from construction, UXO footprint and ecological halo footprint should also be included under this. The RIAA will be updated at Deadline 7 to itemise these additional footprints (some of which are coincident and therefore **NOT** additive) so that the ExA and SoS are able to clearly understand what these footprints are should they agree with Natural England's position.

Table 2-18 The Applicants' response to Natural England's Comments on The Examining Authority's Second Written Question [REP5-056]

I.D.	Examining Authority's Question	Natural England's Response	The Applicant's Response
REP5-056: FSE.2.12	**Potential effects on sandeel and herring populations** The ExA would welcome a brief, high level summary of the MMO's, NE's and the applicants' latest positions on the following issues including positions on whether proposed mitigation from the applicants is adequate. Cross references to other documentation submitted into the examination which give the detail would also be helpful: a) Potential impacts on fish from underwater noise from piling in the array areas for: i) Herring ii) Sandeel b) Potential impacts on fish from construction activity along the export cable corridor through the Flamborough Head spawning ground for: i) Herring ii) Sandeel c) Potential impacts on fish from underwater noise from UXO clearance in the array areas and along the export cable corridor through the Flamborough Head spawning ground for: i) Herring ii) Sandeel d) Potential effects on fish spawning areas from benthic ecological halo effects associated with above ground structures including cable protection installed on the sea bed for: i) Herring ii) Sandeel	a) Natural England maintain our advice that a 135dB behaviour threshold should be used when assessing impacts of underwater noise, however the Applicant has stated that they will be submitting updated modelling for the worst case piling locations at Deadline 5, which we will provide comment on at Deadline 6. We consider that additional mitigation options are available to the Applicant to reduce their UWN impacts (see Section 1 of this Appendix). b) Natural England have assumed this question is referring to The Banks herring population. Whilst the removal of the ESP in the export cable corridor (ECC) has removed direct impacts to herring, we have outstanding concerns regarding localised impacts of cable protection placement and spawning habitat loss in the ECC. These predominantly relate to herring in the ECC, however will also apply to sandeel where the ECC encounters Dogger Bank. c) With the Applicant's commitment to low-order deflagration and the use of bubble curtains were high order to be used, we are content that injury risk to herring and sandeel from associated underwater noise has been mitigated as far as possible. However, we have outstanding concerns in relation to spawning habitat loss from UXO. Please see Appendix C5, and ISH Action 28 in Appendix M5 of our Deadline 5 submission for further detail. d) There are still a number of outstanding concerns relating to benthic ecological halo effects both to herring and sandeel as a prey species. Please see Section 2 of this Appendix and Appendix C5 for further detail. e) Natural England confirm that impacts from EMF are no longer a concern in regard to both herring and sandeel. However, in relation to impacts caused by localised heating of sediment from cables, please see Section 3 of this Appendix and ISH Action 27 in Appendix M5 of our Deadline 5 submission. f) Please see Section 2 of this Appendix.	The Applicants acknowledge Natural England's response and note that they have responded to this request from the ExA within **The Applicants' Responses to EXQ2** [REP5-036]. With regards to point c) the Applicants provided their response to RR-039: E19 in **The Applicants' Responses to Relevant Representations** [PDA-013] which states '*a nominal assessment of Unexploded Ordnance (UXO) clearance impacts is included within the assessment of underwater noise impacts within section 10.6.1.4 of **Chapter 10 Fish and Shellfish Ecology** [APP-091], with specific impact ranges relating to UXO presented in Table 10-23 of the chapter.*' With regards to the concerns relating to potential spawning habitat loss from UXO, the Applicants direct the Natural England to the response provided in **The Applicants Responses to Deadline 4 Documents** [REP5-037] (REP4-127:C1) which provides the relevant UXO footprint. In summary: **Appendix B - Dogger Bank B Unexploded Ordnance (UXO) Crater Survey Results of Review of Evidence on Recovery of Sandbank Habitat Following Habitat Damage (Revision 2)** [REP3-021] provides the results from several high-order clearances. These show a maximum crater diameter of around 5m. – therefore a crater would be around 20m². As noted in section 5.5.7.4.3 of **Chapter 5 Project Description (Revision 3)** [REP1-009] however, it is expected that 41 UXO would need to be cleared during the construction phase across the entirety of the Offshore Development Area. This would be a total footprint would be 820m² across the Offshore Development Area. Total area assumed for permanent habitat loss =2,762,253m² (1,715,882m2 for the Array Areas and 1,046,371m² for the Offshore Export Cable Corridor – note that this is reduced from the numbers present in Table 4-3 of **Project Change Request 1 – Offshore and Intertidal Work**s [AS-141] due to the Applicants' commitment to cable bundling, Table 9-1 of **Chapter 9 Benthic and Intertidal Ecology** [APP-085] will be updated at Deadline 7). The **UXO footprint** would add 0.03% to the assessed footprint of permanent habitat loss if it was considered as permanent. As such the Applicants consider that, even if UXO clearance was included as habitat

I.D.	Examining Authority's Question	Natural England's Response	The Applicant's Response
	e) Potential effects on fish spawning areas from EMF effects and the localised heating of sediment within the array areas and along the export cable corridor for: i) Herring ii) Sandeel f) Potential cumulative effects from the proposed development in combination with other planned projects on: i) Herring ii) Sandeel g) Potential long term or permanent effects if cable protection was not removed from the export cable corridor post decommissioning within areas of high - very high potential spawning habitat for: i) Herring ii) Sandeel If there are other potential impacts on fish that remain a concern, please list them and provide a brief outline of your latest position.	g) Natural England maintains the advice provided in response to ISH Action 57 in Appendix M of our Deadline 4 submission [REP4-126] on this issue.	loss, the increase in area would not be significant. However, the Applicants maintain that evidence presented in **Appendix B - Dogger Bank B Unexploded Ordnance (UXO) Crater Survey Results of Review of Evidence on Recovery of Sandbank Habitat Following Habitat Damage (Revision 2)** [REP3-021] shows that a) infilling is rapid and b) infilling will be from local surface sediments. Therefore, this would not constitute permanent habitat loss and additional consideration of footprint is not required. In terms of effects on sandeel, Section 2.4 in the **Review of Evidence on Recovery of Sandbank Habitat Following Habitat Damage (Revision 2)** [REP3-021] details the recovery of sandeel populations. Following any disturbance of sediments due to construction of the windfarm, timescale for recovery will be dependent on availability of suitable sediment (i.e. without raised silt content), the size of the remaining population within the recovery area, rates of recruitment and mortality, and immigration from outside the area of impact. Given the small size of UXO craters, rapid infilling and infilling with local sediments there will be limited footprint from UXO clearance. Although most of the Offshore Development Area is suitable to some degree for sandeel spawning (see Figure 3-1 of the **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105], the small area affected by UXO clearance (820m2) would be minimal. In terms of herring, Figure 2-1 of **Heat Mapping Report: Atlantic Herring and Sandeel** [AS-105], shows that the key areas are along the Offshore Export Cable Corridor (ECC), the Array Areas are of limited spawning potential. Therefore only UXO clearance in the Offshore ECC would be relevant and again the small area affected by UXO clearance (820m^2) would be minimal. It must be noted that UXO clearance is not part of the DCO application and will require a separate Marine Licence Application post-consent. Furthermore, it was agreed with Natural England during a meeting held on 7th May 2025 that an updated impact assessment for UXO clearance will be presented within the Marine Licence Application post-consent and is not required before the end of Examination.

2.9 Natural England - Appendix F5 Marine Mammals

Table 2-19 – The Applicants' response to Natural England's Appendix F5 to the Natural England Deadline 5 Submission – Marine Mammals [REP5-057]

I.D.	Natural England's Response	Applicants' Response
REP5-057: F0	**Appendix F5 – Natural England's Advice on Marine Mammals at Deadline 5** In formulating these comments, the following documents submitted by the Applicant have been considered in relation to the impacts of Dogger Bank South (East and West) Offshore Wind Farm (DBS) on Marine Mammals: • [REP4-094] 14.9 Illustrative Underwater Noise Reduction Technical Note • [REP4-055] 8.25 Outline Marine Mammal Mitigation Protocol (Revision 4) • [REP4-053] 8.23 In Principle Monitoring Plan (Revision 3) • [REP4-093] 14.8 Effects on Prey Species Technical Note • [PD-021] The Examining Authority's Second Written Questions (ExQ2) Our detailed comments on the documents submitted by the Applicant in relation to Marine Mammals as listed above, are provided below.	No response is required.
REP5-057: F1	**1. Underwater noise impacts and mitigation** Natural England welcomes the Applicant's submission of the Illustrative Underwater Noise Reduction Technical Note [REP-094]. We have provided comments below based on the information included within the technical note, however we request that the underwater noise modelling report which supports the note is also provided for review. [REP4-094] demonstrates that if a 10 dB reduction in underwater noise (UWN) was achieved through primary or secondary mitigation, impacts to marine mammal species would be significantly reduced. The reductions presented would likely remove the significant impacts on marine mammal populations currently predicted and enable Adverse Effects on Integrity (AEoI) of the Humber Estuary SAC, Berwickshire and North Northumberland SAC and Southern North Sea SAC to be ruled out. They would also reduce the injury zones for minke whale and harbour porpoise to a level that could be fully mitigated with Acoustic Deterrent Devices. This is all welcome, however the Applicant also states that they "will not be committing to any specific secondary noise reduction methods until the final design parameters, including all relevant primary measures, are finalised post consent". Natural England accepts this and does not expect the Applicant to commit to specific secondary noise reduction methods. Instead, we suggest that the Applicant could commit to achieving a 10dB reduction in UWN during construction from levels predicted in the environmental assessment via primary and/or secondary mitigation, with the exact systems and/or technologies to be determined post-consent. **We consider a commitment of this nature to be essential, as unsecured mitigation that may or may not be applied cannot be considered in impact assessments. We must therefore base our conclusions on the assessment as it currently stands, whereby our position remains that AEoI cannot be ruled out for grey seals in the Humber Estuary SAC for the project in-combination with other plans and projects, for grey seals in Berwickshire and North Northumberland Coast (BNNC) SAC for the project alone, and harbour porpoise in Southern North Sea SAC in-combination with other plans and projects.**	The Applicants confirm that the underwater noise modelling report requested by Natural England was submitted at Deadline 5 as Appendix A of the **Illustrative Underwater Noise Technical Note (Revision 2)** [REP5-032]. The Applicants have incorporated the following wording into the **Draft Development Consent Order (Revision 9)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5, with minor amendments to include reference to primary measures and ensure that the drafting is suitable for a statutory instrument. This was provided by the Marine Management Organisation (MMO) in response REP4-115:3.5. *'(g) in the event that driven or part-driven pile foundations are proposed to be used, a marine mammal mitigation protocol (in accordance with the outline marine mammal mitigation protocol), the intention of which is to prevent injury to marine mammals, following current best practice as advised by the relevant statutory nature conservation bodies and which must include consideration of noise reduction methods and/or, deployment of noise mitigation systems or noise abatement systems that will be utilised to manage sounds from those piling activities and such protocol must include full details and justification for the mitigation chosen or excluded for deployment;'* The Applicants consider this wording to be sufficient to satisfy the MMO and are engaging with Natural England on the condition wording submitted.

I.D.	Natural England's Response	Applicants' Response
	As impacts cannot be ruled out at this time, particularly for the Project alone and injury zones, it is not in doubt that additional mitigation will be needed post-consent. Further, as the Applicant considers that a (minimum) 10dB reduction is both achievable and necessary to reduce impacts, we do not consider that it is unreasonable to expect the Applicant to commit to additional mitigation at this stage. We also highlight that commitments of this nature are not without precedent. During the Rampion 2 OWF Examination, the Applicant committed to a 15dB reduction through the use of NAS to reduce UWN impacts on black seabream in the Kingmere MCZ.	
REP5-057: F2	**Outline Marine Mammal Mitigation Protocol** Natural England advises the Applicant to present the impacts of UXO clearance with and without additional mitigation measures in the final UXO clearance MMMP and UXO clearance Marine Licence Application	The Applicants welcome this clarification and will ensure appropriate assessments are presented at the time of the Unexploded Ordnance (UXO) clearance Marine Licence Application.
REP5-057: F3	**In Principle Monitoring Plan** Following a meeting with the Applicant (7th May 2025), the Applicant requested further information on Natural England's advice on potential Marine Mammal monitoring schemes. We acknowledge there are numerous data gaps, however the following ideas relate specifically to impacts resulting from the Dogger Bank South project. Bottlenose dolphin We note that the characterisation of bottlenose dolphin baseline distribution relies on the assumption that their distribution along the northeast English coast is the same as in Scotland. Natural England considers this a significant assumption as it directly affects the prediction of the number of animals potentially affected by the project. We would be supportive of the Applicant undertaking post-consent monitoring to provide evidence to support the use of this assumption in future OWF impact assessments. Operational noise It is acknowledged in 7.11.11.3 Underwater Noise Modelling Report [AS-138], that the turbine sizes used to inform operational noise modelling are considerably smaller (0.2-6.15 MW) than those to be used at DBS (15-26.5 MW), and that no empirical data is available for turbines of this size. We consider there to be a significant gap in knowledge of the operational underwater noise levels of wind turbine generators of this size. This knowledge gap could be the target of project-level or strategic post-construction monitoring undertaken by the project. Foraging Behaviour As per our comments on Prey Impacts in Appendix E5, recent publication from the PrePared project has identified that installation of wind turbines has resulted in a modified predator-prey interaction, with a weaker relationship between porpoises and sandeel density (Fernandez-Betelu *et al.* 2024[34]). From this study around the Beatrice and Moray (East and West) Offshore Windfarms, Natural England advises the applicant to expand their scope of monitoring to	The Applicants welcome the advice and steer on potential monitoring options. Please see responses to R17.38 and R17.39 in **The Applicants' Responses to Rule 17 letter dated 9th June 2025** [document reference 16.9] for the Applicants' position on post-consent bottlenose dolphin monitoring and monitoring of operational noise.

[34] Fernandez-Betelu, O., Iorio-Merlo, V., Graham, I. M., Benhemma-Le Gall, A., Cheney, B.J., Payo-Payo, A., Thompson, P.M. (2024). PrePARED Task 4.1 – Using modelled sandeel distribution maps to characterise spatio-temporal variation in the occurrence and foraging behaviour of harbour porpoises around offshore windfarms. PrePARED Report, No. 001. March 2024.

I.D.	Natural England's Response	Applicants' Response
	investigate these impacts further, particularly with the significance of the array being located in both Dogger Bank SAC and the Southern North Sea SAC.	
REP5-057: F4	**Effects on Prey Species** Please refer to Appendix E5 on Natural England's updated advice regarding Harbour Porpoise and Prey Species impacts.	Please see responses provided in **Table 2-17** of this document.

2.10 Natural England - Appendix G5 Offshore Ornithology

Table 2-20 – The Applicants' response to Natural England's Appendix G5 to the Natural England Deadline 5 Submission – Offshore Ornithology [REP5-058]

I.D.	Natural England's Response	Applicants' Response
REP5-058: G1	**Offshore Ornithology Assessment** Natural England's detailed comments on the updated ornithology assessment are provided in Table 1 below. Whilst we continue to have some concerns regarding the in-combination assessment and PVA outputs, we can now accept the figures presented by the Applicant for the impacts of the two Projects 'alone' and acknowledge that the remaining concerns, which relate to the in-combination assessment, are unlikely to materially influence the impact assessment conclusions or the calculations of compensation requirements. Notwithstanding the concerns outlined in Table 1 below, based on the figures provided by the Applicant for the impacts of the Projects alone (using 100% adult apportioning), and in light of our conclusions on other recent projects, **Natural England advise that an Adverse Effect on Site Integrity (AEoI) cannot be ruled out for**: • Kittiwake at FFC SPA for the project alone and in combination with other plans and projects • Guillemot at FFC SPA in combination with other plans and projects • Razorbill at FFC SPA in combination with other plans and projects • Seabird assemblage at FFC SPA in combination with other plans and projects • Guillemot at the Farne Islands SPA in combination with other plans and projects We also advise that we are unable to rule out significant adverse effect from cumulative impacts for the following: • Guillemot • Razorbill • Gannet • Kittiwake • Great black-backed gull	The Applicants welcome Natural England's acceptance of the Projects' impact assessment figures and will address Natural England's comments on the cumulative and in-combination figures in response to specific points below. However the Applicants disagree with Natural England's conclusions on Adverse Effect on Site Integrity (AEoI) and significant adverse effect which the Applicants consider are a consequence of Natural England's over-precautionary stance with respect to assessing ornithological impacts of offshore wind farms, as detailed in REP3-030.
REP5-058: G2	**Offshore Ornithology Mitigation** *Please see our response to Action Point 7 in Appendix M5 for further detail.* Natural England note the Applicant's comments on why they are unable to increase the air gap to mitigate collision impacts; however, as they are not ecological matters, they are not within Natural England's field of expertise to comment on. We maintain our previous advice that we do not consider site selection to be an effective embedded mitigation measure for the Projects with respect to FFC SPA seabird features. We also continue to advise, as we have done since the pre-application phase (ETG Meeting dated 6th February 2024), that density hotspot modelling should be provided, to investigate possible options for mitigation via excluding turbines from these areas. In the context of offshore ornithology, this becomes the sole remaining avoidance/mitigation option available to the Applicant, should their position regarding the air gap be accepted. We reiterate our concerns regarding the scale of predicted impacts on seabirds, and the ongoing uncertainty regarding the impacts of the project on seabird prey resources.	The Applicants direct Natural England to the responses provided to REP5-060:7 in **Table 2-24** of this document.

I.D.	Natural England's Response	Applicants' Response
REP5-058: G3	**In Principle Monitoring Plan** Natural England note that no changes have been made to the In Principle Monitoring Plan for offshore ornithology since the last revision. We therefore refer the Applicant to our comments made at Deadline 3 [REP3-056].	The Applicants maintain their position detailed in their responses on this matter in REP3-056: A13 to REP3-056: A20 of The Applicants' Responses to Deadline 3 Documents and Additional Submissions [REP4-088]. In summary, the Applicants consider that it is important to retain flexibility in In Principle Monitoring Plans (IPMPs) to allow for the incorporation of new information as studies of seabird ecology in relation to offshore wind farms is constantly developing and do not propose to further update the IPMP for offshore ornithology within this Examination. Further detail on the monitoring aims and hypotheses will be provided in the development of these proposals in collaboration with Natural England and other statutory nature conservation bodies in the post-consent stages of the Projects.
REP5-058: G4	**Effects on Prey Species** Please refer to Appendix E5 for Natural England's updated advice regarding Ornithology and prey species impacts.	The Applicants direct Natural England to the responses provided to REP5-056: E4 and REP5-056: E4.2 in **Table 2-17** of this document.

Table 2-21 – Table 1 Natural England's Advice On: [REP4-033] 7.12 ES Chapter 12 - Offshore Ornithology (Revision 3); [REP4-017] 6.1 RIAA HRA Part 4 of 4 – Marine Ornithological Features (Revision 4); [REP4-035] 7.12.12.13 Appendix 12-13 Population Viability Analyses (Revision 2) [REP5-058]

NE ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-058: G5	6.1: section 9.6.2.2.5, Table 9-23, Table 9-1	In-combination assessment for kittiwake at FFC SPA The in-combination totals presented by the Applicant for impacts on kittiwake at FFC SPA have been further reduced compared to previous iterations of the RIAA. We note that we previously commented [AS-159] that these appeared to be lower than we would expect, given the totals presented during the SEP&DEP Examination. We note that the totals presented in Table 9-23 now lead to total impacts at SEP&DEP of 355.17 birds, whilst the in-combination total presented at SEP&DEP was 394. The Applicant has stated that these differences are due to recent changes in avoidance rates. However, Natural England note that the SEP&DEP totals accounted for these changes. We therefore query why the relevant totals presented by the Applicant should be lower by 39 birds. Natural England further note that the impact figures for FFC SPA kittiwake presented by the Applicant for several more recent projects appear to be incorrect. The Applicant has presented	Whilst we acknowledge the Applicant's comments that these discrepancies are not likely to affect the assessment conclusions or compensation quantum (REP3-028), they lead to significantly lower in-combination impacts than we would expect, and it is important that the assessment is as accurate as possible as it may be used as a reference for future projects. Natural England reiterate our previous advice that that the Applicant should check the in-combination figures for kittiwake at FFC SPA and correct these where necessary, to reflect the most recently published figures for other projects. We refer the Applicant to our End of Examination position on Outer Dowsing OWF[35]. We also advise that the Applicant explain, in full, any remaining discrepancies in their assessment totals. Ideally, the relevant PVAs should also be re-run to account for the revised figures.	The Applicants have very carefully checked their kittiwake cumulative and in-combination tables and can confidently confirm that, apart from minor variations (e.g. approx. 0.1 for a small number of older projects due to rounding variations) and a discrepancy of a single kittiwake collision for Outer Dowsing (15.5 instead of 14.5, which changed between that project's original submission and their final one), these values are correct for the current SNCB avoidance rate guidance. The SEP and DEP total for kittiwake collisions apportioned to the Flamborough and Filey Coast (FFC) Special Protection Area (SPA) of 394 referred to by Natural England (REP8-038 of that project's submissions[36]) reflects the total obtained when the older avoidance rate of 99.2% is applied, not using the current avoidance rate of 99.23%. Furthermore, DEP and SEP omitted impacts for projects subject to compensation requirements (Hornsea 3, Norfolk Vanguard, Norfolk Boreas, East Anglia ONE North and East Anglia TWO). Therefore Natural England estimated the collisions for these aforementioned compensation projects and added it to the DEP and SEP figure. Natural England estimated the extra mortality to be 101.1. But notably, Natural England (REP8-102 of the DEP and SEP submissions[37]) stated in relation to this figure:

[35] EN010130-002183-Natural England - Appendix F6 Natural England's advice and end of Examination position on Offshore Ornithology.pdf
[36] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010109/EN010109-002168-13.3%20Apportioning%20and%20Habitats%20Regulations%20Assessment%20Updates%20Technical%20Note%20(Revision%20E)%20(Clean).pdf
[37] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010109/EN010109-002129-Natural%20England%20-%20Other-%20EN010109%20441148%20SEP%20DEP%20Appendix%20B3%20-%20Natural%20England%E2%80%99s%20Offshore%20Ornithology%20Position%20(Revision%202)%20Deadline%208.pdf

NE ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		impacts for Outer Dowsing OWF (ODOW) of 14.5 annual adult mortalities, while final impact figures for this project were 15.5.		*It should be noted that the 101.1 birds have not been corrected for the revised Avoidance Rate for kittiwake, and so is a precautionary total.* Hence this value (101) was calculated using an avoidance rate of 98.9% and the avoidance rate has been revised twice since then: 98.9% was replaced by 99.2% (as used by DEP and SEP for the other projects) and has now been further refined to 99.23% (as applied by the Projects). When the values presented by DEP and SEP (Table 10-2 of the DEP and SEP submission REP8-038) for all wind farms except those subject to compensation are adjusted from the avoidance rate of 99.2% (as applied at that time) to the current joint SNCB advised rate of 99.23% the values the Applicants presented in Table 9-23 of the **Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 4 of 4 – Marine Ornithological Features (Revision 4)** [REP4-016] are obtained (i.e. these figures are identical save for the avoidance rate adjustment). And the same applies when the compensation project collision estimates (taken from each project's consented values) are adjusted for the latest avoidance rate advice, the values presented in the Applicants' submission (REP4-016, Table 9-23) are obtained. The Applicants have reviewed Natural England's Outer Dowsing submission1 and note that the values presented for kittiwake collisions therein were also taken from the DEP and SEP submission without adjustment (i.e. they have not been updated in-line with the current joint SNCB guidance on avoidance rates) and hence the values are similarly incorrect as outlined for DEP and SEP above (please see Appendix A for the chain of documents that link the DEP and SEP submissions to Outer Dowsing's). The above was explained to Natural England in a call on the 9th June 2025 and followed up with the same supporting information presented here. The Applicants accept that the FFC SPA kittiwake collision estimate presented by the Applicants for Outer Dowsing has been revised since this table was collated, from 14.5 (in the Outer Dowsing original submission; APP-235 of the Outer Dowsing submissions) to 15.5 in their final submission (REP6-028). However, as the addition of a single kittiwake collision makes no material difference to the assessment it is not proposed to resubmit the RIAA or Population Viability Assessment (PVA).
REP5-058: G6	6.1: sections 9.6.2.3.5, 9.6.2.5.5, Tables 9-28, 9-36	<u>In-combination figures for guillemot and razorbill at FFC SPA</u> The abundances apportioned to FFC SPA for guillemot and razorbill for some recent projects appear to be incorrect. For ODOW, the abundances presented by the Applicant for guillemot and razorbill equate to impacts at of 237.2 and 54.7 (70% displacement, 2% mortality), respectively. However, the	As for kittiwake, these discrepancies are not likely to affect the assessment conclusions or compensation requirements. However, we advise that the Applicant should revise the figures used in their in-combination assessments for other projects and ensure that these align with the most recently published figures for those projects.	The Applicants have reviewed the Outer Dowsing submissions and note that the values included in **RIAA HRA Part 4 of 4 – Marine Ornithological Features (Revision 4)** [REP4-016] (submitted on the 25th April) reflected those in the Outer Dowsing original submission and not those in the Outer Dowsing final submission. However, since the latter was not submitted until the 4th April, leaving less than 3 weeks for the Applicants to make any updates the Applicants would note that it is not surprising that these (small)

NE ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		final RIAA for ODOW gave the relevant figures as 248.7 and 68.5 (when calculated according to Natural England's advice). The impacts presented by the Applicant for these projects are therefore lower than we would expect. We further note that we had previously requested that in-combination assessment totals for displacement-affected species be presented according to agreed impacts, rather than apportioned abundances, to allow for ease of review, and that this has not been done.	Ideally, the relevant PVAs should then be re-run to account for the revised figures. We continue to request that in-combination assessment totals for displacement-affected species be presented according to agreed impacts, rather than apportioned abundances, to allow for ease of review.	changes in Outer Dowsing's figures (11.5 additional guillemot and 13.8 additional razorbill) had not been incorporated in the Applicants' Deadline 4 submission. This situation highlights the challenges facing projects being assessed in parallel with others (which applies to Outer Dowsing, North Falls and Five Estuaries) all of which may be revising their impact estimates at each procedural deadline. Given that there is no guarantee that these regular updates will not continue throughout the examination the Applicants do not consider regular revision and re-revision in this manner to be an efficient use of time for either the Applicants, Stakeholders or Examiners. Furthermore, as acknowledged by Natural England: *these discrepancies are not likely to affect the assessment conclusions or compensation requirements* Therefore, no further updates are proposed at this stage of the Examination.
REP5-058: G7	6.1: section 9.8.2.2.5	In-combination assessment for guillemot at Farne Islands SPA The Applicant has stated that Blyth OWF is the only other project within guillemot foraging range of the Farne Islands SPA, and therefore the only project included in the in-combination assessment. Natural England disagrees with this statement, and notes that Berwick Bank OWF and Ossian OWF are also within foraging range for guillemot breeding at the Farne Islands SPA. The most recent publicly available figures for Berwick Bank[38] predict impacts to 168 adult guillemot a year, though this is likely to be an underestimate. Further, the final in-combination figures for guillemot at Farne Islands SPA presented for ODOW was 213.4 (70% displacement, 2% mortality). Natural England also highlight the recent Rampion 2 decision[39], whereby an Adverse Effect on Integrity could not be ruled out for in-combination impacts on guillemot at Farne Islands SPA.	Natural England advise that the Applicant revise the in-combination assessment for guillemot at the Farne Islands SPA to include all relevant projects. We refer the Applicant to our End of Examination position on Outer Dowsing OWF1. We consider that the addition of these projects would result in a significant increase in the predicted impacts, and therefore potentially a change in the assessment conclusions compared to the assessment as currently presented. Given the significant increase in the in-combination total expected, the relevant PVA(s) should then be re-run to account for the revised figures.	The Applicants are submitting a revised guillemot in-combination assessment for the Farne Islands SPA in the **RIAA HRA Part 4 of 4 – Marine Ornithological Features (Revision 5)** [document reference: 6.1] at Deadline 6 incorporating Natural England's advice on projects to include in this assessment.
REP5-058: G8	7.12:	Cumulative impact assessments The cumulative impact totals for all projects for several species are lower than we would expect.	Natural England advise that the Applicant should revise their cumulative impact assessment totals to reflect the most recently published figures from other projects. Ideally, the relevant PVAs should then be re-run to account for the revised figures.	The Applicants have thoroughly reviewed their cumulative tables and are confident these are accurate for the wind farms presented and following the latest SNCB guidance. **Great black-backed gull**

[38] Berwick Bank Wind Farm - RIAA - Part 3 - SPA Assessments (December 2022)
[39] EN010117-002452-Secretary of State for Energy Security and Net Zero's Decision Letter .pdf

NE ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		• Great black-backed gull is given as 1227.5 (Table 12-109), while the figure presented by ODOW was 1420 (see PINS EN010130, Table 13) • Guillemot is given as 1899 – 44,308 (Table 12-93), while the figures presented by ODOW were 2225 - 51,911 • Razorbill is given as 645-15,058 (Table 12-96), while the figures presented by ODOW were 651.5 – 15,201. Natural England note that we would not expect the cumulative impact totals at DBS to be lower, than those presented by ODOW. The cumulative impact total for kittiwake is also lower than that presented by the Applicant in previous versions of the RIAA (4090), but no explanation has been provided for this change.		Natural England state there is a discrepancy between the total they expect (1420, as presented by Outer Dowsing) and the Applicants' total of 1227. This difference is 193. This is accounted for as follows. For the Greater Gabbard wind farm an annual collision estimate of 27 was presented at an avoidance rate of 99.82% (Banks *et al.* 2006[40]). Adjusting this to the current avoidance rate of 99.4% gives a figure of 90 (as presented by the Applicants in Table 12-109 of **Chapter 12 Offshore Ornithology (Revision 3)** [REP4-032]). Unfortunately, Outer Dowsing reproduced a figure of 250 which had been erroneously calculated by DEP and SEP. This error appears to have occurred because DEP and SEP applied an avoidance rate correction (from 99.82% to 99.5%) to collision figures which had already been corrected (i.e. the original collisions were corrected twice). This accounts for 160 of the 193 apparent discrepancy identified by Natural England. For the Inch Cape wind farm there appears to be an error in the annual total column of the Outer Dowsing submission (Table 12.81 of REP4a-011 of the Outer Dowsing submissions[41]). This states that there zero collisions in the breeding season, 44.2 in the nonbreeding season and 219.2 in total. The Applicants have double-checked the original Inch Cape submission and can confirm that the annual total using the current avoidance rate should be the same as the nonbreeding season one (44.2). This difference (175) is clearly more than that remaining between the Applicants total and the one Natural England expected (1420). However the sum of the Outer Dowsing annual total is actually 1595, not 1420 as reported. Correcting for the Greater Gabbard and Inch Cape errors, the Outer Dowsing total is 1260, 33 more than that in the Applicants' table. This is accounted for by Outer Dowsing including several additional Scottish wind farms which have been recently submitted (but not consented). Given that it is clear there is considerable scope for mistakes in transcribing and updating cumulative impacts, as illustrated by this detailed investigation undertaken by the Applicants, it is the Applicants' strong recommendation that Natural England should review and collate wind farm impacts for all UK projects and maintain this as new projects are added, in order that this can be made available to future applicants and avoid this situation in future. **Guillemot** Outer Dowsing's guillemot total annual abundance (Table 12.61 of REP4a-011 of the Outer Dowsing submissions[42]) was 741,587. This is 108,618 more

[40] The Potential Effects on Birds of the Greater Gabbard Offshore Wind Farm Report for February 2004 to April 2006. BTO Research Report No. 440 A.N. Banks, I.M.D. Maclean, N.H.K. Burton, G.E. Austin, N. Carter, D.E. Chamberlain, C. Holt & M.M. Rehfisch British Trust for Ornithology, The Nunnery, Thetford, IP24 2PU S. Pinder, A. Batty, E. Wakefield & P. Gill

[41] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-001850-6.1.12%20Chapter%2012%20Offshore%20and%20Intertidal%20Ornithology.pdf

[42] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-001850-6.1.12%20Chapter%2012%20Offshore%20and%20Intertidal%20Ornithology.pdf

NE ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
				than the Applicants' equivalent (632,969, REP4-032 Table 12-92). This difference is accounted for by six additional Scottish wind farms (137,022 in total) minus 28,404 for wind farms which Outer Dowsing report as being lower (for the Projects: 35,604 instead of 6,0438; Five Estuaries 4,813 instead of 4,899 and for Outer Dowsing 24,709 instead of 27,653). As for great black-backed gull the Applicants consider these differences to reflect the inevitable situation which arises with an ever increasing list of wind farms, regularly revised guidance on approaches and the increasing risk of errors being made. As above, the Applicants consider the solution to this situation is for Natural England to be custodians of the cumulative list of wind farm impacts and to supply this list to applicants. **Razorbill** Outer Dowsing's razorbill total annual abundance (Table 12.67 of REP4a-011 of the Outer Dowsing submissions[43]) was 217,162. This is 2,044 more than the Applicants' equivalent (215,118, REP4-032 Table 12-96). This difference is accounted for by six additional Scottish wind farms (10,768 in total) minus 8,805 for wind farms which Outer Dowsing report as being lower (for the Projects: 21,303 instead of 28,886 and for Outer Dowsing 12,257 instead of 13,479) plus 81 for Forthwind which Outer Dowsing mistakenly added twice (i.e. an annual total of 277 instead of 196). As for guillemot and great black-backed gull the Applicants consider these differences to reflect the inevitable situation which arises with an ever increasing list of wind farms, regularly revised guidance on approaches and the increasing risk of errors being made. As above, the Applicants consider the solution to this situation is for Natural England to be custodians of the cumulative list of wind farm impacts and to supply this list to applicants. Overall these differences will make no material difference to the assessments and the conclusions of the PVA will be little affected, therefore the Applicants do not consider there to be any useful purpose served by continuing to update these totals and rerun the PVA each time one of the 50 wind farms in the list releases an update.
REP5-058: G9	6.1: sections 9.6.2.2.5.2, 9.6.2.3.5.2, 9.6.2.5.5.2, 12.13: Tables 3-8	PVA results Natural England have not been able to replicate the Applicant's results for kittiwake, guillemot or razorbill at FFC SPA when running PVAs with the NE PVA tool using the inputs presented by the Applicant. For example, when using the input for in-combination impacts on kittiwake of 591 (Table 3), we obtain significantly lower median Counterfactual of Population Growth Rate (CGR) and	Natural England advises the Applicant to verify the results of all PVA scenarios run for the assessment and clearly present the inputs and outputs for all PVA scenarios. Once this has been confirmed by the Applicant, Natural England will re-assess the specification and parametrisation of the models.	The Applicants have scrutinised the PVA inputs, outputs and model code and have realised there has been a misunderstanding of the model guidance literature with respect to how mortality is applied to immature age classes. The 'switch' in the model used to set immature mortality to match adult mortality was turned 'on', as per the guidance, however this setting appears to have been over-ridden during model execution due to the presence of default values of zero in the input tables. This led to models being run without impacts being applied to the immature age classes.

[43] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-001850-6.1.12%20Chapter%2012%20Offshore%20and%20Intertidal%20Ornithology.pdf

NE ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		Counterfactual of Population Size (CPS) than those presented by the Applicant (0.992 and 0.783, compared with 0.9956 and 0.8716). These correspond to significantly larger declines in population growth (0.8%, as opposed to 0.44%) and population size (21.7%, as opposed to 12.8%). Likewise, when using the input for in-combination impacts on guillemot of 1541 (Table 5), we obtain lower median CGR and CPS than those presented by the Applicant (0.988 and 0.697, compared with 0.9931 and 0.8059), corresponding to significantly larger declines in population growth (1.2%, as opposed to 0.69%) and population size (30%, as opposed to 19.4%).		When this is rectified the outputs correspond to those in Natural England's comment. The PVA have been re-run and the all the relevant sections of the ES, RIAA and associated appendices have been updated. These documents have been submitted at Deadline 6.
REP5-058: G10	6.1, 7.12, 12.13	PVA: duration of project impacts Natural England note that all PVAs have been carried out for a period of 30 years, beginning in 2027. We note that the more recent project timeline indicates that impacts will actually begin in 2029, although we acknowledge this should not materially affect the results of the PVAs. However, we also note that the Applicant has referred to the DBS project lifetime as 35 years (REP3-028).	Natural England request clarification on the proposed lifetime of the projects and note that if this is longer than 30 years, the Applicant should consider whether the PVAs should be rerun to reflect this.	The Applicants can confirm that the proposed worst-case lifetime of DBS East and DBS West operating concurrently is 30 years and there is therefore no requirement to rerun the PVA for this aspect. However, the PVA have been re-run (as per the previous comment and response) to amend a separate error (see response to REP5-058: G9 above) and submitted at Deadline 6.

2.11 Natural England - Appendix H5 Offshore Ornithology Compensation

Table 2-22 – Natural England's Advice On: 6.2.2. Appendix 2 Guillemot and Razorbill Compensation Plan [REP4-025]; 6.2.2.1 Annex A – Outline Guillemot and Razorbill Compensation Implementation and Monitoring Plan [REP4-027]; 14.12. Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment [REP4-097] [REP5-059]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-059: H1	6.2.2: Paras 80-81; 97-98, Table 4-4. 6.2.2.1: para 21, Table 4-2.	<u>Calculation of compensation quantum: use of upper 95% confidence limit (UCL)</u> Natural England welcomes the presentation of compensation requirements according to both the mean and upper 95% confidence limit for the impact values of the Projects on guillemot and razorbill at FFC SPA, in Table 4-4 and Table 4-2. These have been presented for both the Applicant's and Natural England's preferred displacement and mortality rates, apportioning, and a range of compensation ratios, though we note that only the Applicant's preferred requirements are included in the text. We also agree with the Applicant's statement that "*Recent consultation with Natural England (April 2025) indicated that it would be acceptable to base compensation requirements upon the mean impact value, but that the proposed compensation measures should have the capacity to accommodate the requirements based upon the 95% upper confidence interval (UCI) of the impact value. Therefore, the compensation requirement for the range of potential impacts for both the mean and 95% UCI is shown in Table 4-4*".	To note We also advise that, going forward, the Applicant makes clear distinctions on the use of wording around compensation targets as opposed to requirements, in order to reduce the risk of misinterpreting their intentions, as has occurred in some recent OWF Appropriate Assessments.	The Applicants acknowledge this comment.
REP5-059: H2	6.2.2: para 96, 98, Table 4-4. 6.2.2.1: para 21, Table 4-2	<u>Calculation of compensation quantum for razorbill</u> The Applicant has revised their initial calculation of the number of breeding pairs of razorbill required to replace a single adult, from 6.16 to 3.88, however no explanation has been provided. We note that the former value of 6.16 is closer to the results of Natural England's own calculations. Natural England also highlight that the Applicant appears to have made a calculation error in the 3:1 ratios presented for razorbill in Table 4-4 and Table 4-2.	Natural England advises the Applicant provide clarity on how the new values were calculated for the number of razorbill breeding pairs required to replace a single adult. We also advise the Applicant to review the calculations for the compensation requirements at different ratios.	Correction of the razorbill calculations is related to the survival rate for year 0-2. Previously the survival rate of 0.63 was applied to each of these years separately resulting in a survival to recruitment of 0.63*0.63*0.895*0.895*0.895 = 0.285. However, prior to updating the **Guillemot [and Razorbill] Compensation Plan (Revision 4)** [REP4-024] for Deadline 4, it was recognised that the 0-2 year survival is a cumulative value and therefore survival to recruitment was calculated as 0.63*0.895*0.895*0.895 = 0.451. When applied to the calculations illustrated in section 4.5.2.5 of the **Guillemot [and Razorbill] Compensation Plan (Revision 5)** [REP5-011] this results in a value of 3.88 breeding pairs required to replace a single adult: (1 / 0.451) / 0.570 = 3.88. The Applicants thank Natural England for highlighting the error in the 3:1 ratio for razorbill stated in Table 4-4 of the **Guillemot [and Razorbill] Compensation Plan Revision 5)** [REP5-011]. This will be corrected to 1636 (5006) in the next revision of the plan, submitted at Deadline 6.

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-059: H3	6.2.2; 6.2.2.1	Compensation requirements for guillemot at the Farne Islands SPA Natural England note that the Applicant is not contemplating potential compensation requirements for guillemot at the Farne Islands SPA. Natural England consider that an Adverse Effect in Integrity on guillemot at Farne Islands SPA cannot be ruled out (See Appendix on guillemot at Farne Islands SPA cannot be ruled out (See Appendix G5) and advise that these impacts should be considered within this derogations case. We highlight the recent derogated consent for Rampion 2 regarding this matter, which sought compensatory measures for this feature due to in-combination effects.	Natural England maintain our previous advice that the Applicant include consideration of compensation requirements for guillemot at the Farne Islands SPA.	Given that no measurable increase in the Farne Islands Special Protection Area (SPA) guillemot mortality is predicted as a result of DBS East and DBS West combined (e.g. with realistic displacement mortality of only 5 birds per year during operation), the Applicant's concluded that the Projects would not contribute to in-combination effects on this species. The Applicants have concluded that there is no risk of an AEoI on the Farne Islands guillemot population either from the Projects alone or in-combination, and note that more than half of the total impact estimated to the Farne Islands SPA population is attributable to one project (Berwick Bank; 55%), while the Projects contribute at most 5%.. However, following Natural England guidance (that compensation for this potential effect could be incorporated into that being sought for Flamborough and Filey Coast (FFC) SPA guillemots), the predicted Projects alone impact on this SPA has been added to that for the FFC SPA on a without prejudice basis and can therefore be compensated in the same manner as for FFC SPA should the Secretary of State require this. Nonetheless, the Applicants have updated the **Guillemot [and Razorbill] Compensation Plan (Revision 6)** [document reference 6.2.2], the **Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 4 of 4 – Marine Ornithological Features (Revision 5)** [document reference 6.1] and Schedule 18 of the **Draft Development Consent Order (DCO) (Revision 9)** [document reference 3.1] for Deadline 6 to include the guillemot from the Farne Islands SPA on a without prejudice basis. The **Habitats Regulations Derogation Provision of Evidence (Revision 3)** [document reference 6.2] will be updated at Deadline 7 to reflect these updates. This does not affect the compensation proposals other than to increase the total mortality to be compensated.
REP5-059: H4	6.2.2: sections 4.5.1.4, 4.5.2.4, paras 73, 76, 89, 93	PVA results and in-combination figures. Natural England refer the Applicant to Appendix G5 for detailed advice on PVAs and the in-combination figures presented in the assessment for guillemot and razorbill at FFC SPA and for guillemot at the Farne Islands SPA.	To note.	The Applicants direct Natural England to the responses provided to REP5-058: G6 and G7 in Table 2-21 of this document.
REP5-059: H5	14.12: Sections 3,	Assessment of compensation potential of identified sites: nesting densities	Natural England advise the Applicant to consider lower nesting densities when assessing the habitat potential for the preferred sites. See Appendix H4 to our DL4 submission.	As stated in **The Applicants' Responses to Deadline 4 Documents** [REP5-037] during feasibility surveys undertaken by Habitat Assessment and Restoration Ltd (HAR) in 2024 high densities of guillemots were recorded in multiple locations. For example, 48

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
	5,6,7, Figure 4	Natural England maintain the advice provided at Deadline 4 [REP4-125] regarding appropriate nesting densities to consider for guillemot. The Applicant has provided photographic evidence of high guillemot nesting densities observed during their surveys. However, we cannot agree that these nesting densities are representative of the average, particularly for boulder habitat, which we note is the predominant habitat type in the Isles of Scilly. We note, for example, that most of the pictures in Figure 4 show nesting densities in wide ledges of flatter areas, and that the Puffin Island boulder habitat picture clearly includes loafing birds on sloping areas not suitable for nesting.		pairs/m² were recorded at Middle Mouse, 60 pairs/m² at St Bees, 43 pairs/m² at St Tudwals East, and 33 pairs/m² at Puffin Island, Wales. Therefore, the Applicants consider that nesting densities of over 40 pairs/m² are not unrealistic and would advocate that nesting densities of 20 pairs/m² could be considered unrealistically low for a healthy colony. Therefore, we consider that presenting the potential densities at the lower level of 20 pairs/m² (as we have in **Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment** [REP4-097]) is suitably precautionary. The Applicants note that the recent Hornsea Project Four Guillemot Compensation Implementation and Monitoring Plan was approved by Natural England based upon predicted nesting density of 27 pairs/m2 (Orsted, 2025[44]). The Applicants therefore do not intend to include lower nesting densities in the habitat assessment.
REP5-059: H6	14.12: Sections 4.2, 6, Figures 9, 12, 18, 21, 24,27, 30, 33, 36, 39, 45	<u>Assessment of compensation potential of identified sites: calculation of available area</u> Natural England welcome the provision of additional detail on the methods used to assess the amount of suitable nesting habitat available. However, in the majority of cases the Applicant's assessment of available habitat includes areas of boulder habitat for which the slope is likely to preclude nesting. We therefore consider it inappropriate for the entire three-dimensional area to be treated as suitable nesting habitat and consider that the potential numbers of breeding pairs estimated based on these calculations may be unrealistically high.	Natural England advise the Applicant to consider the three-dimensional nature of the areas being assessed, and to account for areas where the slope is likely to preclude nesting.	The Applicants acknowledge Natural England's comment but consider that the approach taken was appropriate and proportionate. At the time when the surveys were undertaken at the Isles of Scilly, the Applicants were in the process of refining the shortlist and were considering each location only for a project-led option. To consider the habitat in the level of detail being suggested by Natural England would have required an overly onerous amount of time, either in the field physically measuring habitat (and causing disturbance to nesting birds) or in the office analysing hundreds of photographs in great detail. The Applicants acknowledge that the areas of boulder and crevice habitat that have been identified may include some areas where slope precludes nesting, however, it should also be acknowledged that the amount of crevice habitat will be underestimated as the assessment does not account for depth of crevice. The example photograph of Men-a-vaur shown below, taken from the **Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment** [REP4-097], demonstrates that the Applicants have taken what they consider to be a relatively conservative approach to quantifying the available habitat. The area of reported available habitat is shown circled in pink but it can be seen that this contains a large amount of crevice habitat which will be underestimated, and there are several areas of suitable habitat outside of that which was quantified.

[44] Orsted (2025). Hornsea Project Four Guillemot Compensation Implementation and Monitoring Plan.

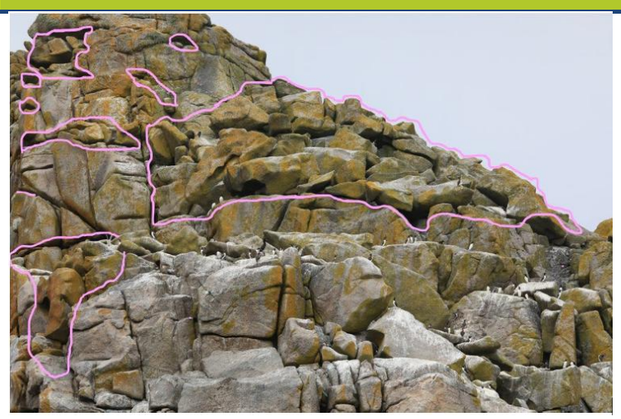
NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
				

Table 2-23 – Natural England's Advice On: 6.2.1 Project Level Kittiwake Compensation Plan (Revision 5), 6.2.1.2 Outline Kittiwake Compensation Implementation and Monitoring Plan and 12.6 Case for Reduction in Kittiwake Breeding Seasons for ANS Installation (Revision 2) [REP5-059]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-059: H7	6.2.1: paras 101, 108, Table 5-1 6.2.1.2: para 28	Calculation of compensation quantum: use of upper 95% confidence limit (UCL) Natural England welcome the presentation of compensation quantum (requirements) according to the upper 95% confidence limit (UCL) for the impact values of the Projects on kittiwake at FFC SPA.	To note.	The Applicants acknowledge this comment.
REP5-059: H8	6.2.1: paras 101,103 106, 107, Table 5-1 6.2.1.2: para 27, 28.	Calculation of compensation quantum: appropriate method Natural England welcome the presentation of compensation quantum (requirements) according to the Hornsea 3 part 2 ('H3pt2') method, in addition to those calculated according to the Applicant's preferred Hornsea 4 ('H4') method.	To note.	The Applicants acknowledge this comment.
	12.6	We note that the population modelling undertaken by the Applicant in 12.6 has applied neither the H3pt2 nor the H4 method to the compensation quanta used, which is based on the impact values alone (see comment below).	Natural England advise that the Applicant update these calculations to include the H3pt2 method.	The Applicants have discussed this request with Natural England (meeting on 9th June 2025) at which Natural England explained that their query was as to whether the Applicants had included predicted dispersal rates in the projections of colony growth. The Applicants explained that the purpose of these colony growth projections was to illustrate that there was little material difference in the time to payback of mortality debt for an Artificial Nesting Structures (ANS) available four years before first turbine operation with that if the ANS

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
				is available 2 years before operation (i.e. the duration to payback simply occurs 2 years later in the latter scenario). Incorporating dispersal rates may change the time to payback, just as each growth rate scenario has different payback durations, but these will not change the effect of two or four years lead-in. It should also be noted that the growth rate values used were drawn from observations of natural colony growth and therefore these already implicitly include all the individual demographic rates which affect population growth, including dispersal rates.
REP5-059: H9	6.2.1: Table 5-1	Calculation of compensation quantum using H3pt2 method Natural England note that the figures presented in Table 5-1 for the compensation quantum as calculated using the H3pt2 method are not the same as those obtained by Natural England using the same method for the same impact values. However, we acknowledge that there is not an 'official' protocol available for H3pt2.	Natural England would welcome further discussion with the Applicant on whether they intend to further update these values, following provision of Natural England's internal calculation spreadsheet (provided outside of the Examination).	When undertaking H3pt2 calculations, the Applicants have applied a natal dispersal rate of 0.89 rather than the 0.77 natal dispersal rate applied by Natural England. Both rates are presented in Coulson (2011) although Horswill and Robinson (2015) present only the 0.89 value and this was therefore considered the appropriate value to use (as per Statutory Nature Conservation Body (SNCB) guidance on demographic rates more generally). This deviation in approach is responsible for the slight discrepancy between the figures as calculated by the Applicants and Natural England and as such, the Applicants do not intent to update the values used.
REP5-059: H10	6.2.1: paras 112, 209. 6.2.1.2: para 28. 12.6	Calculation of compensation quantum: application of compensation ratio Natural England note that the Applicant proposes that a compensation ratio of 2:1 should be applied when calculating the Projects' compensation requirements (6.2.1 para 112, 6.2.1.1 para 28). We refer the Applicant to our responses to ExAQ1 OR.1.12 and OR.1.15, and comments made in Appendix G4 of our DL4 submission on the application of compensation ratios. We note that we remain unable to advise on an appropriate specific compensation ratio at this time, given that specific details of location, numbers of nesting spaces, and design have not yet been provided by the Applicant. However, we note that we are unlikely to advise that a ratio of 1:1 is appropriate, and as such we welcome the Applicant's stated commitment to a ratio greater than this. However, we also note that it is possible we may advise that a 3:1 ratio may be appropriate, depending on the details of the measures and lead in times for their implementation. We further note that the population modelling undertaken by the Applicant in [REP4-085] has applied no ratio to the	To note.	The Applicants acknowledge that a ratio of 1:1 is unlikely to be appropriate and have reviewed Natural England's responses to ExAQ1, and comments made in Appendix G4 of their DL4 submission on the application of compensation ratios [REP4-124]. Natural England's position as outlined in [REP4-124] is that they "recognise that using the 95% UCI impact value can, in combination with use of greater ratios, result in large compensation quanta for some species, and that therefore a pragmatic interpretation of these calculations may be needed. For example, where a compensation case for a project with a substantial quantum is well detailed and has good prospects of success, a case could be made that where the Hornsea 3 approach is adopted, it is unnecessary to then adopt both the 95% UCL impact value and a ratio higher than 2:1 to adequately account for uncertainty." Following the completion of geophysical surveys, ongoing stakeholder engagement, selection of an ANS location, imminent submission of a marine licence application, seabed lease application progression, a defined position on quantum and an updated **Outline Kittiwake Compensation Implementation and Monitoring Plan (Revision 2)** [REP4-022] submitted during examination the Applicants consider their compensation case to be both advanced and comprehensive. The progressed nature of the Applicants kittiwake

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		compensation quanta used, which is based on the impact values alone (see comment below).		compensation package was confirmed by Natural England during a meeting between both parties on 28th May 2025. As such, the Applicants consider a 2:1 ratio to be suitably cautious whichever calculation method is applied to determine compensation quantum.
REP5-059: H11	6.2.1: paras 110, 113	Compensation quantum for ODOW Natural England note that the Applicant has stated that the compensation requirements for ODOW OWF are between 42 and 102 breeding pairs (para 110) or 84 breeding pairs at a ratio of 2:1 (para 113), but that the UCL is "not known". Natural England refer the Applicant to our End of Examination position for ODOW OWF1, which states that we consider ODOW's compensation requirements to be 542 breeding pairs of kittiwake, as calculated according to the UCL, H3pt2 method and applying a 2:1 ratio. We also highlight that we advised that there would be good justification for applying a 3:1 ratio to ODOW's compensation quantum (which would equate to 813 pairs) if the lead-in time for the implementation of the measure was reduced. We note that these figures, and consequently the compensation requirements for DBS and ODOW combined, are significantly higher than those presented by the Applicant. We further note that the combined figures presented by the Applicant are based on a calculation of the Projects' compensation requirements using the H4 method, rather than the H3pt3 method, as advised by Natural England.	Natural England advise the Applicant to present the compensation requirements for kittiwake for ODOW OWF, and for the Projects and ODOW OWF combined, as calculated according to Natural England's advice. See End of Examination position for ODOW OWF[45] for Natural England's position on ODOW OWF's compensation requirements.	Updated compensation figures for Round 4 calculated according to Natural England's advice are presented in updates to the **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 6)** [document reference 6.2.1] to be submitted at Deadline 6.
REP5-059: H12	6.2.1: paras 110, 111, 113	KSCP compensation envelope Natural England note that the Applicant continues to refer to the Kittiwake Strategic Compensation Plan ('KSCP') (APP-053) as stating that the "final compensation quantum would fall within the 'compensation envelope' outlined" in the KSCP. We refer the Applicant to our previous comment on this (R&I log H7), where we highlighted that the 'compensation envelope' estimated within the KSCP was based on lower impact predictions than were subsequently submitted.	To note.	Figures provided in updates to **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 5)** [REP4-020] demonstrate that when applying the Hornsea 3 calculation (upper 95% Confidence Limit (CI)), with a ratio of 2:1 for both the Projects and Outer Dowsing, the Round 4 compensation requirement remains within the envelope of 2,500-5,500 as set out in **Round 4 Kittiwake Strategic Compensation Plan** [APP-053]. The initial estimate of compensation population made in **Round 4 Kittiwake Strategic Compensation Plan** [APP-053] (2,500-5,500) has not been revised, nor has a Kittiwake Strategic Implementation and Monitoring Plan defining any updates been published by the Crown Estate. These estimates were made based on the likely feasible scale of structures required to be delivered by the Projects and Outer

[45] EN010130-002326-EN010130 5966611 ODOW Appendix G5 - Natural England's End of Examination Position on Offshore Ornithology Compensation Deadline 6.pdf

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
				Dowsing and were informed by discussions with other offshore wind developers delivering kittiwake compensation via ANS. Given that the Round 4 projects, when applying Natural England's preferred compensation calculation approach remain within the original estimation envelope, the Applicants do not see any requirement to make any adjustments.
REP5-059: H13	6.2.1: section 6.3.4. 6.2.1.2: section 4.1.2	Site selection Natural England welcome the additional information provided by the Applicant on the site refinement process in 6.2.1. We note that the final candidate sites being progressed are within Area of Search (AoS) 4 (4b and 4d) and AoS 6 (6a). We refer the Applicant to the comments we made regarding these AoS at Deadline 2 (Appendix H2) and Deadline 3 (Appendix H3). In these comments, we expressed concerns about the proximity of AoS 4 to both the Hornsea Zone projects and DBS projects and advised that consideration should be given to a greater degree of collision risk for a kittiwake colony established here. We also advised that consideration should be given to the possibility of competition with foraging kittiwake breeding at FFC SPA for AoS 6, by investigating the possibility of overlap between kittiwake distribution maps (e.g. Cleasby et al 2020[46], Waggitt et al 2020[47]) with this AoS. We advise that this could also include consideration of recent kittiwake tracking data from FFC SPA (Wischnewski et al 2017[48]). We also noted the proximity between AoS 6 and the AoS being taken forward by ODOW OWF and advised that consideration should be given to the added ecological resilience of having offANS structures in different locations, as highlighted in the KSCP. Nevertheless, Natural England welcome the Applicant's ongoing work on this issue and the stated commitment to identifying a project-led offANS site before the close of the Examination period.	Natural England advise that the Applicant should provide information regarding how the advice we provided in Appendix H2 of our Deadline 2 submission and Appendix H3 of our Deadline 3 submissions on the relevant candidate sites has been and will be considered in the site selection process.	The Applicants met with Natural England on 28th May 2025 to present their final preferred candidate site for the delivery of offshore ANS. Updates to **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 5)** [REP4-020] at Deadline 6 present the Applicants preferred site (Site 6a). It is the Applicants hope that the selection of Site 6a will allay Natural England's concerns regarding the potential for increased collisions as a result of proximity of the ANS colony to the Projects and the Hornsea projects. The Applicants have considered the location of key foraging areas for FFC SPA kittiwake to maximise the chances of success for the ANS colony, as well as reduce competition with the existing population. Predictive modelling informed by seabird tracking from FFC SPA (Cleasby *et al.*, 2020; Wakefield *et al.*, 2017) was utilised by NIRAS when developing ecological suitability scores (see Appendix D of **Kittiwake Strategic Compensation Plan** [APP-053]) that have been used by the Applicants as a guidance tool to support the site selection process. Further to this, when assessing site suitability, the Applicants followed principles set out in Appendix D of **Kittiwake Strategic Compensation Plan** [APP-053] that the offshore ANS should ideally be 55km to 100km from the FFC colony to avoid the core foraging range for FFC SPA kittiwake, while maintaining connectivity to allow colony interchange. The Applicants have also reviewed data from the Royal Society of the Protection for Birds (RSPB) (2017) as part of the site selection process and have sought to avoid areas with the highest utilisation distribution, though acknowledge limitations of this data which include a limited sample size, and data bias due to battery capability of the trackers. Site 6a is in excess of 60km from FFC SPA kittiwake colony and as such, the Applicants can assert that they have sufficiently considered the possibility of competition for resources.

[46] Cleasby, I.R., Owen, E., Wilson, L., Wakefield, E.D., O'Connell, P. and Bolton, M., 2020. Identifying important at-sea areas for seabirds using species distribution models and hotspot mapping. Biological Conservation, 241, p.108375.
[47] Waggitt, J.J., Evans, P.G., Andrade, J., Banks, A.N., Boisseau, O., Bolton, M., Bradbury, G., Brereton, T., Camphuysen, C.J., Durinck, J. and Felce, T., 2020. Distribution maps of cetacean and seabird populations in the North-East Atlantic. Journal of Applied Ecology, 57(2), pp.253-269.
[48] Wischnewski S., Fox D.S., McCluskie A. and Wright L.J. 2017. Seabird tracking at the Flamborough and Filey Coast: Assessing the impacts of offshore wind turbines. Pilot study 2017 – Fieldwork report and recommendations. RSPB Centre for Conservation Science Report to Ørsted.

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
REP5-059: H14	6.2.2: section 6.3.5; 6.2.1.2: section 4.2, Table 4-1	<u>ANS Design: ledge overhangs</u> Natural England note that the Applicant has made some changes to some of the design parameters outlined in the KSCP. We note that the Applicant has discussed these changes with the KSG and has characterised them as 'necessary' (6.2.2. para 199, 6.2.1.2 para 44). We note, in particular, the Applicant's statement that ledge overhangs would be extremely challenging to incorporate, and that the KSG's position on this (Table 4-1) was: "*An overhang is preferable if possible. But the Kittiwake Steering Group recognise that it is not possible to replicate the complexity of natural environments on artificial structures offshore*" Natural England note that we have previously advised that ledge overhangs are important to provide shelter from falling guano (with disease implications) and rain. We note that all members of the KSG agreed that ledge overhangs were preferable. We further note that the Hornsea 3 'nearshore' ANS have incorporated ledge overhangs and therefore would be keen to understand the engineering problems this is presenting for the Applicant.	Natural England advise that ledge overhangs should be incorporated into ANS design wherever possible, and that the Applicant should provide a full explanation of why this design parameter cannot be fulfilled.	To address concerns held by Natural England, inclined walls have been confirmed as a feature of the offshore ANS topside design, ensuring overhang for each row of kittiwake nesting spaces. The roof deck also has an overhang which removes lines of sight for predatory birds perched on the roof to the nesting ledges, as well as providing the nesting spaces protection from the rain.
REP5-059: H15	6.2.2: para 149, Table 5-1. 6.2.1.2: para 30	<u>ANS Design: number of nesting spaces:</u> Natural England note that the Applicant has stated that their concept design for the offshore ANS is scalable, and can be increased in size "to accommodate more nesting spaces with an upper limit exceeding that of the worst-case estimates of compensation quantum up until the point that it is built", noting in 6.2.2, para 149 that this includes a compensation quantum calculated according to the UCL, 100% adult apportioning, and H3pt2 method, as advised by Natural England, and presented in Table 5-1. Natural England welcome this statement by the Applicant. However, we refer the Applicant to our comments above on the calculations using the H3pt2 method, ODOW's compensation requirements, and the application of compensation ratios.	To note.	Please refer to updates to **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 6)** [REP4-020] (to be submitted at Deadline 6) for details regarding the upper limit of nesting spaces on the Applicants offshore ANS. The upper limit capacity was discussed with Natural England at a meeting with the Applicants on 28th May 2025.
REP5-059: H16	6.2.2.: para 155. 6.2.1.2: para 30	<u>Number of offANS structures:</u> Natural England note that the Applicant has stated that, should ODOW OWF not proceed, sufficient nesting capacity would be	We would welcome any high-level information regarding the emerging 'apportionment arrangements' between the two Applicants, noting that the considerably smaller impacts of ODOW opens an opportunity for an ODOW-led structure to supply a significant proportion of Dogger Bank South's requirements.	The upper limit capacity was discussed with Natural England alongside the identification of a preferred site for ANS installation at a meeting with the Applicants on 28th May 2025. Distance of the preferred site from Outer Dowsing's offshore ANS has been presented to Natural England and will be provided in updates to the

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		provided by the Projects' single project-led ANS to meet the Projects' compensation requirements. We refer the Applicant to our previous comments (AS-160) where we expressed our concern that, given the Projects' predicted impacts, the provision of a single offANS may not be sufficient to deliver the level of compensation required for Dogger Bank South. We also note that two structures in different locations provide added ecological resilience, as highlighted in the KSCP.		**Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 5)** [REP4-020]. The Applicants are confident that the package of measures being delivered to offset kittiwake impacts (project led offshore ANS, shared reciprocal nesting space on Outer Dowsing's ANS and the Applicants onshore ANS at Gateshead) will provide sufficient ecological resilience. The three ANS structures on which the Applicants have secured nesting space are geographically diverse and host sufficient nesting capacity for the Projects (as outlined in updates to **Appendix 1 - Project Level Kittiwake Compensation Plan (Revision 5)** [REP4-020]. At present the Applicants are not at liberty to provide the details of the 'apportionment arrangements' with Outer Dowsing Offshore Wind (ODOW), as this is covered by an Non-Disclosure Agreement (NDA).
REP5-059: H17	12.6: paras 12, 14, 16, 18. 6.2.2: paras 204	<u>Hornsea 3 and Hornsea 4 non-material change (NMC) consents:</u> Natural England note that the Applicant has stated that the consents for the Hornsea 3 and Hornsea 4 non-material changes (NMC) to reduce the amount of time ANS are required to be in place prior to operation "*have provided precedent for consent on the basis of installing two years in advance of operation*" (12.6 para 12). Natural England refer the Applicant to the comments we made in REP3-055, where we highlight that the Hornsea 3 and Hornsea 4 NMCs were consented on the basis of the particular compensation measures proposed by those projects, and robust evidence that the changes would not result in significant additional impacts, and that they do not, therefore, automatically set a precedent for other projects to follow. For further reference on the matter please see Natural England's advice provided to Outer Dowsing OWF[49].	To note.	The Applicants acknowledge this comment.
REP5-059: H18	12.6: paras 16, 17, 20, 21, 22, 23, 24, 31; Tables 4-1, 4-2, 4-3, 4-4.	<u>Compensation quanta used in population modelling.</u> Natural England welcome the additional detail provided by the Applicant on the compensation quanta that have been used to assess the likely timescales for the offANS to fully deliver compensation for the Projects' impacts.	Natural England advise that the Applicant should provide the modelling results for the compensation requirements of the Projects according to the SNCB-advised approach.	The growth rate information presented **in Reduction in Kittiwake Breeding Seasons Prior to Artificial Nesting Structure Installation (Revision 2)** [REP4-083] and the compensation quanta methodology (H_4 or H_3) are separate concepts.

49 https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-002184-Natural England - Appendix G4 Natural England's position regarding the proposed reduction in lead-in time for kittiwake Artificial Nesting Structure(s).pdf

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
	6.2.2: Table 5-1	However, we note that the quanta used have applied neither the H3pt3 nor the H4 method for calculating the number of breeding pairs of kittiwake required to compensate for the impacts, nor have they applied any compensation ratios. Instead, the quanta used in the modelling are simply the mean and UCL impact values for the Projects. We note that in REP3-055 submitted at Deadline 3, we advised that the Applicant should provide the modelling results for the compensation requirements of the Projects according to the SNCB-advised approach, and we do not consider that this has been done.		The compensation quanta methodology (H4 or H3, plus any ratio applied) is used to determine the size of the ANS through determination of the number of nest spaces required. This is based on the mortality. This methodology does not provide any calculations for how the colonising population grows. The calculations shown in **Reduction in Kittiwake Breeding Seasons Prior to Artificial Nesting Structure Installation (Revision 2)** [REP4-083] estimate how quickly the population on the ANS grows. This is presented for a starting population of 1 as the worst case and a series of demographic rates are also presented (in line with the approach of Hornsea 4 for which this approach was accepted). The calculations also take account of the projected size of the ANS and applies a logistic growth rate ('S' shaped) based on this (this takes account of density dependence and slowing growth as the colony approaches full capacity). In this case the assumption was for a conservative 2500 nest spaces. The calculations then compare the growth of the population (on the right-hand side) with the accumulating 'mortality debt' (left hand side). The collision mortality is based on the mean or UCL estimate, the compensation quantum is not relevant. The tables show, for the different demographic rates, annual mortality and initial colony size, the point at which the mortality debt is 'paid back'. If dispersal rates are also explicitly included in these growth rate scenarios they will simply add an additional delay to the periods to achieve payback, but those will be consistent and therefore do not alter the conclusions of this exercise which is that there is little material difference between the ANS being available four years prior to operation or two. It should also be noted that the growth rate values used were drawn from observations of natural colony growth and therefore these already implicitly include all the individual demographic rates which affect population growth, including dispersal rates.
REP5-059: H19	12.6: paras 17, 22, 23 Tables 4-1, 4-2, 4-3, 4-4	Productivity rates, growth rates, and initial colony sizes used in population modelling. Natural England welcome the Applicant's inclusion of a productivity rate of 0.69 to the population modelling. We note, however that the average productivity rate for kittiwake at FFC SPA between 2015 and 2021 was 0.57 (Aitken et al 2017, Babcock et al 2015, Babcock et al 2016, Babcock et al 2018, Cope et al 2021, Lloyd et al 2019, Lloyd et al 2020). We do not, therefore, accept the Applicant's characterisation of a 0.69	Natural England advise that the Applicant should consider the potential impacts of delayed colonisation in their population modelling.	The Applicants note the points on the productivity rates and accept that there is potential that these could be lower, noting that if the 0.57 rate was used this would not be enough to sustain a growing population. It is possible to provide any number of lower estimates for all demographic rates, but there is equal uncertainty as to whether these reflect what will happen as with the rates used in [REP4-083]. Furthermore, the productivity rate at FFC SPA is unlikely to be the most appropriate guide for that which may occur on the ANS, since most estimates from comparable locations have reported rate of 1.0

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		productivity rate as "worst case" (para 23). We also note that climate change is predicted to have a negative impact on future productivity rates for kittiwake populations in the UK (Pearce-Higgins 2021), which further highlights the need for caution when projecting high rates of productivity in future decades. We note that the lowest growth rate considered by the Applicant is 20%. We refer the Applicant to our comments at DL3 (REP3-055) in which we highlighted that we have previously advised that a 10% growth rate was more likely to be appropriate for the lifetime of a wind farm. While we welcome the Applicant's consideration of two different starting colony sizes (of 1 and 20 pairs), Natural England note that the population modelling continues to assume immediate colonisation following installation. We refer the Applicant to our comments at Deadline3 (REP3-055) in which we advised that the impacts of delayed colonisation should be considered, given the variable levels of colonisation shown by OWF-related ANS to date and note that this has not been done.		or higher, owing to factors such as the lower local competition for resources, shorter foraging trips, etc. (Christensen-Dalsgaard *et al.*2019[50]). Therefore, the Applicants do not propose to present any variations on the demographic rates presented in [REP4-083]. In terms of the timing of first colonisation, it is true that the Applicants have assumed immediate colonisation. However, the growth rate is not determined by when colonisation occurs, but the demographic rates discussed above. Therefore, all things being equal, the population would grow at the same rate whenever first colonisation occurs. This could mean that the 'pay back' point is delayed (i.e. if colonisation occurs after one year then time to payback is delayed by one year, if first colonisation is delayed by two years then payback is delayed by two years, etc.). There is little value in presenting such scenarios as, the timeline simply moves to the right relative to the delay. As above, it is the role of monitoring and adaptive management to track the functioning of the compensation and find solutions if it is not working as predicted by the Applicants. Therefore, the Applicants do not propose to present any variations on the point of first colonisation presented **in Reduction in Kittiwake Breeding Seasons Prior to Artificial Nesting Structure Installation (Revision 2)** [REP4-083].
REP5-059: H20	12.6: paras 23, 24, 26, 30, Table 4-1, 4-2, 4-3, Table 4-4 ; 6.2.2: para 207, Table 5-1	Population modelling conclusions. Natural England note that the results of the population modelling presented in Table 4-3 show that, for a compensation quantum of 377 individuals, and an initial colony size of 1 pair, compensation is not fully achieved within fifty years for any productivity rates, unless growth rates are above 50%. Table 4-4 shows that, for the same compensation quantum, with an initial colony size of 20 pairs, compensation is only fully achieved within fifty years if productivity is greater than 0.8, and only within thirty years if growth rates are above 50%. Given that the compensation quantum used in the modelling is far lower than even the lowest quantum calculated by the Applicant using either the H4 or the H3pt3 method (6.2.2 Table 5-1), even when calculated according to the mean value and at a 1:1 ratio, that productivity rates above 0.8 and growth rates of 50% may be unrealistic, and that colonisation may be	We advise the Applicant to present the results according to SNCB advice on compensation quantum calculation, and to consider the implications of delayed colonisation.	As discussed above (REP5-059: H18 and REP5-059: H19) (a) the compensation quantum is not relevant to consideration of the growth rates, this is only used to determine the size of the ANS, (b) the implication of delayed colonisation is simply that the 'pay back point' will be delayed. The Applicants also note that Table 4-3 presents the highly unlikely situation of the upper 95% collision estimate occurring in every year of wind farm operation. A simple consideration of probability indicates how highly unlikely this is: multiplying this probability level by itself twice indicates a one in 1,600 chance, three-times is one in 64,000 and four-times is one in 2,560,000. In other words the likelihood that there would be 377 kittiwake collisions four years in a row is less than one in two million. Tables 4-1 and 4-2, using the mean collisions, whilst still precautionary, are considered to preset more realistic predictions. The Applicants have undertaken a robust site selection process for the ANS, following the methods outlined by The Crown Estate's

[50] Christensen-Dalsgaard, S., Langset, M. and Anker-Nilssen, T. (2019) Offshore oil rigs – a breeding refuge for Norwegian black-legged kittiwakes Rissa tridactyla? Seabird 32: 20-32.

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		delayed (REP3-055), Natural England note that the results presented appear to cast some doubt on the ability of the Projects to compensate for their predicted impacts on kittiwake within even fifty years.		Kittiwake Compensation Steering Group (KCSG) in the **Round 4 Kittiwake Strategic Compensation Plan** [APP-053]. The design of the ANS will likewise follow best practice. This approach maximises the chances of the ANS being successful and functions as predicted. It is the role of monitoring and adaptive management to track the functioning of the compensation and find solutions if it is not working as predicted by the Applicants.
REP5-059: H21	6.2.2: para 210; 6.2.1.2: para 79 12.6: paras 25, 30	Natural England welcome the Applicant's stated commitment to continuing to maintain and monitor the offANS beyond the lifetime of the Projects, until such time as compensation requirements are fully delivered, should this not be achieved within the Projects' lifetime. However, we refer the Applicant to our comments above on the need to account for a sufficient compensation quantum, and to our previous comments (REP3-055) on the need to factor in mortality debt accumulated should the ANS underperform or take a significant period of time to become colonised. We note the Applicant's statement (12.6, para 30) that "*In the worst-case scenarios, the ANS would be unlikely to compensate for the lifetime collision mortality as calculated, whether the structure is installed either two, or four years in advance of wind farm operation*". Natural England do not consider the scenarios in question to be "worst case" (see comments above on compensation quantum, productivity, growth rates and colonisation). We further consider the uncertainties regarding the ability of the proposed measures to sufficiently compensate for the impacts of the Projects are not an appropriate reason for reducing the lead-in times to installation. On the contrary, these uncertainties support the need for installation to occur as soon as is possible in advance of operation. This is not to say that we in any way underestimate the significant installation challenges.	Natural England consider that the uncertainties regarding the ability of the proposed measures to sufficiently compensate for the impacts of the Projects support the need for installation of ANS to occur as soon as is possible in advance of operation.	The Applicants have undertaken a robust site selection process for the ANS, following the methods outlined by The Crown Estate's KCSG in the **Round 4 Kittiwake Strategic Compensation Plan** [APP-053]. The design of the ANS will likewise follow best practice. This approach maximises the chances of the ANS being successful and functioning as predicted. It is the role of monitoring and adaptive management to track the functioning of the compensation and find solutions if it is not working as predicted by the Applicants. The Applicants consider that a range of scenarios have been presented and that there is little value in showing more pessimistic scenarios. As stated above, if the compensation does not function as expected, this will be picked up in monitoring and adaptive management will come into play. To be clear the Applicants are not advocating any delay in installation of the ANS, this will be undertaken as soon as possible with site selection, Marine Licence and design work all well underway. Furthermore, the Applicants have installed an onshore ANS at Gateshead which has capacity to delivery compensation for the Projects up to seven years in advance of any impacts occurring.
REP5-059: H22	6.2.2: paras 217, 246-250; 6.2.1.2: paras 16-17, 31, 78; 12.6: paras 29, 31	Natural England note that the Applicant refers to the existing onshore ANS at Gateshead as potentially having the capacity to deliver a portion of their compensation requirements and avoid the accrual of mortality debt. We refer the Applicant to our previous comments (REP3-055) which explain our position that, while we are not opposed to some nest spaces on the onshore ANS being retained for 'adaptive management' should	To note.	The Applicants acknowledge this comment.

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue	Applicants' Response
		the offshore ANS fail, we consider the extent of benefit it could provide to be limited.		
REP5-059: H23	6.2.1.2: paras 66-69	Natural England welcome the provision of additional detail on monitoring plans in the Outline KCIMP. We welcome the Applicant's proposal to use remote camera systems to monitor the offANS. However, we advise the Applicant to consider the feasibility of other monitoring methods in the event that the trials at the onshore ANS prove unsuccessful.	Natural England advise that the Applicant should consider other monitoring methods that could be used in the event that camera trials at the onshore ANS prove unsuccessful.	The Applicants have committed to a combination of remote camera and in-person monitoring of the offshore ANS, as detailed in O**utline Kittiwake Compensation Implementation and Monitoring Plan (Revision 2)** [REP4-022].
REP5-059: H24	6.2.1.2: para 82	Natural England welcome the additional information provided on reporting within the Outline KCIMP. We note that the Applicant states that the annual report will "*comment on survey methods*" and success criteria. Natural England advise that the annual report should include full details of survey results, and how these compare against the defined success criteria.	Natural England advise that annual reports should include full details of survey results, and how these compare against the defined success criteria.	The Applicants acknowledge Natural England's response. It is the Applicants intention to share survey results with the Kittiwake Steering Group (and KCSG if required) in the annual report detailing the effectiveness of compensation measures.
REP5-059: H25	6.2.1.2: paras 75-80	Natural England welcome the provision of additional detail on potential adaptive management measures within the Outline KCIMP. However, we note the lack of detail provided by the Applicant as to specific adaptive measures that could be adopted and their likely effectiveness, which is perhaps inevitable given the paucity of evidence regarding the effectiveness of such measures.	Natural England advise that subsequent versions of the KCIMP should provide further detail on the specific adaptive management measures that may be deployed, and their likely effectiveness, recognising that this may only be meaningful once the offANS designs are developed further.	The Applicants acknowledge Natural England's response and are continuing to develop details surrounding success criteria and adaptive management.
REP5-059: H26	6.2.1.2.	Natural England welcome the provision of additional detail in the Outline KCIMP. The Applicant has yet to identify a specific location or design for the structure, though we do acknowledge that the Applicant has committed to identifying a suitable site within the Examination period.	Natural England look forward to the provision of specific locations for offshore ANS before the end of the Examination.	The Applicants have identified a preferred location for the project led offshore ANS. This was presented to Natural England on 28th May 2025 and will be detailed in updates to **Appendix 1 - Project Level Kittiwake Compensation Plan** [document reference 6.2.1] at Deadline 6. The **Outline Kittiwake Compensation Implementation and Monitoring Plan (Revision 2)** [REP4-022] will be updated with specifics relating to location and further details on design (where appropriate) before the end of examination.

2.12 Natural England - Appendix M5 Examining Authority's Action Points

Table 2-24 – The Applicants' Response to Natural England's Appendix M5 to the Natural England Deadline 5 Submission – Examining Authority's Action Points [REP5-060]

Action No	Action	Natural England Response	Applicants' Comment
REP5-060:3	a) Confirm with the applicants what buffer distance would be appropriate for an assessment for action point 2. b) Comment on the applicants' opinion given in the hearing of whether a reassessment using a buffer greater than 2km would make a notable difference to the assessment conclusions.	Natural England understand that the Applicant will be submitting a cumulative displacement assessment for the full area between the two arrays at Deadline 5. This was presented to Natural England at a meeting on 7th May 2025 and we have agreed that, pending review of the full report, this will be sufficient to provide necessary context and impact conclusions would likely be unaffected.	The Applicants note that the report referenced here (**Potential Auk Displacement Between Dogger Bank South Array Areas** [document reference: 16.5]) has been submitted at Deadline 6.
REP5-060:4	Confirm whether it believes that there are any outstanding issues regarding the provision of the information by the applicants relating to collision risk.	Natural England are happy with the assessment of collision impacts for the Projects alone. However, while updated cumulative and in-combination totals have been provided for kittiwake, there are outstanding concerns that the outputs are not what we would expect (see Appendix G5). Whilst we advise that this is addressed, we note that it will not affect the assessment conclusions or the calculation for compensation requirements (which is based on the impacts of the Projects alone).	The Applicants welcome Natural England's agreement with the Project alone collision estimates. The Applicants have reviewed the cumulative and in-combination tables and provided a response to these points in **Table 2-21** of this document. In summary the Applicants have reviewed the figures and consider them to be an accurate account of the estimates for other wind farms obtained following the current Natural England guidance. Further detail is provided in **Table 2-21** of this document.
REP5-060:7	Respond to Dr Trinder's (the applicants) comments during ISH5 on ornithological mitigation including: a) The applicants' position on the size of the blade tip clearance (air gap). b) appropriate foraging ranges. c) why the applicants have not included hotspot modelling to identify particularly high impact areas as a mitigation option to inform array reductions.	a) Natural England acknowledge the Applicant's submission regarding why they are unable to increase the air gap to mitigate collision impacts, however as they are not ecological arguments they are not within Natural England's field of expertise to comment on. b) Please refer to Annex A of this document. c) Please refer to Annex A of this document.	The Applicants have provided responses to these points in the REP5-060:7a and REP5-060:7ab of **Table 2-25** below.
REP5-060:8	Respond to the applicants' comments during ISH5 on in combination totals and project compensation for kittiwake at the Flamborough and Filey Coast Special Protection Area (SPA).	For comments on in-combination totals for kittiwake at FFC SPA, see response to ISH action 4, and Appendix G5 of our Deadline 5 submission. For comments on compensation measures for kittiwake at FFC SPA, see Appendix H5 of our Deadline 5 submission.	The Applicants have responded to comments on in-combination totals for kittiwake at Flamborough and Filey Coast (FFC) Special Protection Area (SPA) in REP5-060:4 above and REP5-058: G5 in **Table 2-21** of this document. Responses regarding Natural England's comments on compensation measures for kittiwake are provided in **Table 2-23** of this document.
REP5-060:10	Respond to the applicants' comments during ISH5 on submission on density dependence modelling and the range of potential future growth rates for seabird population trends to inform the Population Viability Assessments.	Please refer to Annex A of this document.	See response provided in **Table 2-25** of this document.
REP5-060:14	Respond to the applicants' comments during ISH5 on their reasoning for the reduction from three to two breeding seasons to	Please refer to Appendix H5 of our Deadline 5 submission.	See responses provided in **Table 2-23** of this document.

Action No	Action	Natural England Response	Applicants' Comment
	achieve compensation for kittiwakes in advance of first operation of the proposed development.		
REP5-060:16	Confirm if there is any additional information outstanding regarding auk compensation quanta which the applicants should provide.	Natural England note that we have advised the Applicant should revise and/or clarify their calculations for compensation quantum for razorbill. Please refer to Appendix H5 of our Deadline 5 submission.	See response to REP5-059: H2 provided in **Table 2-22** of this document.
REP5-060:19	Respond to the applicants' comments during ISH5 on auk compensation.	Natural England have commented on the Applicant's auk compensation proposals in detail in Appendix H5.	See responses provided in **Table 2-22** of this document.
REP5-060:21	Respond to the applicants' comments during ISH5 regarding changes to the location of the planned exit pits and the likelihood of impacts to red throated diver in the Greater Wash SPA.	Natural England welcome the clarification provided by the Applicant in [REP4-088] and are satisfied that an AEoI on Red throated diver in Greater Wash SPA can be ruled out due to the very limited interaction between the cable works area and the Greater Wash SPA and 2km buffer.	The Applicants welcome Natural England's agreement on this matter.
REP5-060:23	Respond to the applicants' comments during ISH5 on the sound exposure level single strike threshold for the assessment of underwater noise impacts on herring and suggested appropriate behavioural threshold.	Natural England maintain our advice that a 135db behaviour threshold should be used when assessing impacts of underwater noise. However, the Applicant has stated that they will be submitting updated modelling for the worst case piling locations at Deadline 5, which we will provide comment on at Deadline 6.	The Applicants acknowledge Natural England's comment and direct Natural England to **Modelling of underwater noise associated with alternative piling locations to inform potential impacts on Atlantic Herring spawning grounds** [REP5-042] technical note submitted at Deadline 5.
REP5-060:27	Respond to the applicants' comments during ISH5 on the need to assess the additional cables for possible heat impacts to sandeel, which they stated has been carried out.	The Applicants state that impacts from EMF have been assessed, however in regards to assessing impacts of heat from cables, the Applicants state that it is ' known and acknowledged, the distance over which or the volume of sediment that would be heated is considered to be less than that of EMF, the impacts of which have been assessed and are considered to be negligible.' This would suggest that no specific heat impacts to sandeel have been assessed by the Applicant. Natural England considers EMF and heat to be two different impacts pathways, therefore we advise the Applicant presents evidence used to ascertain that these have the same impacts to both the environment and sandeel. If the Applicant has assessed impacts to sandeel, Natural England would like clarification from the Applicant as to where the assessment is presented. Natural England have included further detailed advice on this matter in Appendix E5 of our Deadline 5 submission.	The Applicants direct Natural England to the response to REP5-056: E3 in **Table 2-17** of this document.
REP5-060:28	Respond to the applicants' comments during ISH5 on the need for an assessment of fish habitat loss from unexploded ordnance clearance.	Natural England maintain our previous advice impacts from the creation of depressions from UXO clearance in areas of coarse or mixed sediments should be considered as permanent habitat change/loss, unless it can be otherwise evidenced that they will backfill with similar sediment types. This is particularly important	As noted in response to REP4-127:C1 of **The Applicants' Responses to Deadline 4 Documents** [REP5-037], should the maximum predicted 41 Unexploded Ordnance (UXO) require clearance (as noted in section 5.5.7.4.3 of **Chapter 5 Project Description (Revision 3)** [REP1-009]), this would result in a footprint of 820m² of habitat loss. This therefore represents a negligible 0.03% increase over

Action No	Action	Natural England Response	Applicants' Comment
		in areas of high potential sandeel spawning habitat, as if craters/depressions infill with fine sediment they will no longer provide suitable spawning habitat. We acknowledge that the impacts of UXO clearance in isolation would not necessarily create a substantial risk, however in combination with other habitat loss arising from the project the impacts could be significant.	the existing habitat loss predicted across the entire Offshore Development Area of 2.76km². As such the Applicants do not believe that, even if UXO clearance was considered as habitat loss, the increase in area would not be significant.
REP5-060:30	Respond to the applicants' comments during ISH5 on the value and sensitivity assessment of Dogger Bank and Smithic Bank.	Natural England maintain our previous advice. Please refer to Table 1, comment 8 of Appendix C5 of our Deadline 5 submission.	See response provided in REP5-061: B25 in **Table 2-26** of this document.
REP5-060:31	Respond to the applicants' comments during ISH5 on NE's suggested commitment for the deposition of dredged material for areas along the export cable corridor utilising a fall pipe.	Please refer to Appendix B5 of our Deadline 5 submission for further detail and action no. 33 below.	See response provided in REP5-054: B2 of **Table 2-9** of this document.
REP5-060:33	Provide an update on any outstanding matters regarding disposal of dredged material.	The Applicant has committed to depositing like sediment on like sediment both within and outside of Dogger Bank SAC in the updated Cable Statement, this should be secured in the Commitment Register. The Applicant has stated [REP3-028], that drill arisings would be located adjacent to turbine foundations and within the scour protection footprint so would be captured within the existing habitat loss estimates. However, it is unclear to Natural England how this would be achieved in practice. Please see Natural England's Deadline 2 submission [REP2-065] and Deadline 4 submission [REP4-127] for further detail. [R&I C25] We continue to advise the use of a fall pipe for sediment deposition within Dogger Bank SAC and along the export cable corridor. Please see Appendix B5 for further detail and advice on outstanding mitigation measures. [R&I B45]	See the response provided in REP5-054: B2 of **Table 2-9** of this document for the details of the Applicants' latest position regarding the disposal of dredged material. See the response provided to REP5-061: C25 of **Table 2-26** of this document for the Applicants' latest position relating to the deposition of drill arisings on the sea floor.
REP5-060:35	Respond to the applicants' comments during ISH5 on the deployment and replacement of cable protection measures following the applicants' oral representation made during ISH5.	Please see our response to Examiner's Question MCP.2.10 in Appendix K5 of our Deadline 5 submission.	See response provided in REP5-050: MCP.2.10 of **The Applicants' Comments on the Responses to ExAQ2** [document reference 16.2].
REP5-060:38	Provide an update on its position regarding ecological halo effects following the applicants' oral representation made during ISH5.	Please see Appendix C5 of Natural England's Deadline 5 submission for further detail.	See responses provided in **Table 2-14** of this document.
REP5-060:39	Provide its opinion on the applicants' comments in ISH5 as to whether the applicants have done everything possible to mitigate for impacts on benthic habitats and have fully adhered to the mitigation hierarchy.	As for Action 35.	See responses provided in REP5-050: MCP.2.10 of **The Applicants' Comments on the Responses to ExQ2** [document reference 16.3].

Action No	Action	Natural England Response	Applicants' Comment
REP5-060:43	Provide an update on its position regarding how the measures put forward for cable bundling and rock protection would be secured following the applicants' oral representation made during ISH5.	With respect to cable bundling, whilst we would welcome this being conditioned within the DCO, we are satisfied with the Applicant's response [REP4-088] and that the updates to the Cable Statement, Commitments Register and RIAA sufficiently secure this commitment.	The Applicants welcome Natural England's agreement that the commitment for cable bundling has been sufficiently secured by the Applicants in the Projects' documentation.
REP5-060:46	To provide a response to the points raised by the applicants during ISH5 in relation to noise abatement systems including the associated procurement.	Natural England welcome that the Applicant is willing to bring the consultation schedule in the SIP forward to account for the procurement timeframes associated with NAS. Please refer to Appendix F5 of our Deadline 5 submission.	The Applicants will amend the time allocated to allow for 'Preparation and consultation on draft Final Site Integrity Plan (SIP)' from 12 months to 18 months in Table 4-2 of the **In Principle Site Integrity Plan for the Southern North Sea Special Area of Conservation (Revision 3)** [REP2-049] to allow the MMO and Natural England more time for consultation. This will be submitted at Deadline 7. See other responses provided in **Table 2-19** of this document.
REP5-060:49	Respond to the applicants' comments during ISH5 in relation to unexploded ordnance clearance.	Natural England agrees to the updated MMMP. In addition, it is recommended that the Applicant presents the impact ranges of UXO clearance with and without the use of NAS.	The Applicants welcome Natural England's agreement and acknowledge Natural England's recommendation. The Applicants will ensure appropriate assessments are presented at the time of the UXO clearance Marine Licence Application.
REP5-060:53	Respond to the applicants' comments during ISH5 in relation to the degree of commitment to additional noise mitigation and the related adverse effects on Southern North Sea SAC and Humber Estuary SAC.	Please refer to Appendix F5 of our Deadline 5 submission.	See responses provided in **Table 2-19** of this document.

Table 2-25 Annex A - Ornithology responses [REP5-060]

Action No	Natural England's Response	Applicants' Response
REP5-060:7a	**Action no 7. Response to Applicant's comments on ornithological mitigation options** a) **Response to Applicant's comments in REP4-086 and REP4-087 on the use of foraging ranges to establish site selection as a mitigation option** *See also our responses to OR 1.5, OR 1.6, and OR 1.39 [REP3-057]* The Applicant continues to state in [REP4-033] Table 12-4, that site selection is an effective embedded mitigation measure for most seabird species, because "*the Projects' Array Areas are located at least 100km from the nearest seabird breeding colony at Flamborough and Filey Coast Special Protection Area (FFC SPA) and as such connectivity for most species will be relatively low*". However, in REP4-086 and REP4-087 the Applicants refer exclusively to guillemot and razorbill. We refer the Examiners to our response to OR.1.39 [REP3-057], in which we state that we do not consider the location of the Dogger Bank South arrays, within a key foraging area in the Dogger Bank SAC, will have meaningfully reduced impacts to FFC SPA seabird features. With respect to guillemot and razorbill foraging ranges, the Applicant claims that the large ranges derived from some of the Fair Isle tracking data represent 'outliers' due to low food	With respect to guillemot and razorbill foraging ranges the Applicants note that although the published study on foraging ranges (Woodward *et al.* 2024) did not highlight the impact of outliers on the estimates, the original report which provides considerably more detail (Woodward *et al.* 2019) did make precisely this point. It is not unreasonable to assume that the constraints of a scientific manuscript (c. 8,000 words) compared with the original 139 page report would be the likely reason that the influence of the Fair Isle data would be omitted in the former. Therefore, the Applicants stand by their position that the range estimates obtained with the inclusion of Fair Isle do not provide realistic representations of the distances these species travel under all but the most atypical circumstances. It is on this basis that the Applicants strongly contest Natural England's assumption that the Projects are within foraging range of breeding birds at FFC SPA. It is also notable that it is during the core breeding months of May (incubation) and June (chick-rearing) when these species were recorded in their lowest numbers on the Projects, which further supports the Applicants' position that breeding connectivity is very unlikely to be as high as Natural England contend.

Action No	Natural England's Response	Applicants' Response
	availability at the time. Natural England do not consider this to be a reason for excluding this data from consideration, as the existing dataset is limited both in terms of colonies and years, such that identifying 'outliers' is problematic. Furthermore, low food availability is a circumstance that may affect birds breeding at FFC SPA in some years, and we note the large numbers of starving auks that were observed and found dead on the UK North Sea coast during late summer/autumn 2021 (Fullick et al 2022[51]) and multiple predictions of increased food shortages due to climate change (IPCC 2022[52], Piatt et al 2020[53]). Data collected under such circumstances should not, therefore, be discounted. We further note that Woodward et al (2024)[54] does not mention removing the Fair Isle data on these grounds. The Applicant also claims that Natural England's advice to use the mean-maximum foraging range plus 1SD is over-precautionary and 'unreasonable', and that they would prefer to use the global mean. This places the Projects beyond foraging range for guillemot, and at the limits of foraging range for razorbill, using values from Woodward et al (2024)[4]. Natural England advise that the use of the mean-maximum foraging range plus 1SD is necessary, due to the limitations of the dataset and the absence of any site-specific information on foraging ranges of guillemot and razorbill at FFC SPA. We also note that, as the evidence base grows with more birds tracked from more colonies, foraging ranges tend to increase (Woodward et al 2024)[54]. Further, evidence shows that foraging range tends to increase with colony size (Jovani et al 2016[55], Patterson et al 2022[56]), and that FFC SPA is one of the largest colonies in the UK for both guillemot and razorbill (Burnell et al 2023[57]). Foraging range is also likely to be greater during incubation than during chick-rearing, and the majority of studies to date have been conducted during chick-rearing (Gee et al 2024[58], Woodward et al 2024[54]). Finally, the Applicant's preferred approach of using the global mean would place the Projects beyond foraging range for FFC SPA kittiwake (54.7+/- 30km) (Woodward et al 20244), however available tracking data clearly shows repeated use of the Project areas by FFC SPA kittiwake, and that these will travel up to 323km (Wischnewski et al 2017[59]). This shows the value of site-specific tracking data and the need to use datasets such as Woodward et al (2024) judiciously when site-specific information is not available, as is the case for guillemot and razorbill breeding at FFC SPA. We also note that the Projects are located within the Dogger Bank SAC, in an area	

[51] Fullick, E., Bidewell, C.A., Duff, J.P., Holmes, J.P., Howie, F., Robinson, C., Goodman, G., Beckmann, K.M., Philbey, A.W. and Daunt, F. 2022. Mass mortality of seabirds in GB. The Veterinary Record, 190(3), 129–130.
[52] IPCC. 2022. Chapter 3: Oceans and Coastal Ecosystems and their Services. In: Working Group II contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Available: [redacted]
[53] Piatt, J., Parrish, J., Renner, H., Schoen, S., Jones, T., Arimitsu, M., Kuletz, K., Bodenstein, B., Garcia-Reye,s M., Duerr, R., Corcoran, R., Kaler, R., McChesney, G., Golightly, R., Coletti, H., Suryan, R., Burgess, H., Lindsey, J., Lindquist, K., Warzybok, P., Jahncke, J., Roletto, J. and Sydeman, W. 2020. Extreme mortality and reproductive failure of common murres resulting from the northeast Pacific marine heatwave of 2014-2016. PLOS ONE, 15(1), e0226087.
[54] Woodward, I.D., Thaxter, C.B., Owen, E., Bolton, M., Ward, R.M. and Cook, A.S., 2024. The value of seabird foraging ranges as a tool to investigate potential interactions with offshore wind farms. Ocean & Coastal Management, 254, p.107192.
[55] Jovani, R., Lascelles, B., Garamszegi, L.Z., Mavor, R., Thaxter, C.B. and Oro, D., 2016. Colony size and foraging range in seabirds. Oikos, 125(7), pp.968-974.
[56] Patterson, A., Gilchrist, H.G., Benjaminsen, S., Bolton, M., Bonnet-Lebrun, A.S., Davoren, G.K., Descamps, S., Erikstad, K.E., Frederiksen, M., Gaston, A.J. and Gulka, J., 2022. Foraging range scales with colony size in high-latitude seabirds. Current Biology, 32(17), pp.3800-3807.
[57] Burnell, D., Perkins, A.J., Newton, S.F., Bolton, M., Tierney, T.D. & Dunn, T.E., 2023. Seabirds Count: a census of breeding seabirds in Britain and Ireland (2015–2021). Lynx Nature Books, Barcelona.
[58] Gee, S., Warzybok, P., Johns, M.E., Jahncke, J. and Shaffer, S.A., 2024. Intra-and interannual variation in the foraging behavior of common Murres (Uria aalge) in the Central California current. Journal of Experimental Marine Biology and Ecology, 575, p.152011.
[59] Wischnewski S., Fox D.S., McCluskie A. and Wright L.J. 2017. Seabird tracking at the Flamborough and Filey Coast: Assessing the impacts of offshore wind turbines. Pilot study 2017 – Fieldwork report and recommendations. RSPB Centre for Conservation Science Report to Ørsted)

Action No	Natural England's Response	Applicants' Response
	that has been long recognised as an important one for sandeel (Dunn 2021[60], Langton 2021[61]) and therefore likely to represent a significant draw to seabirds breeding at FFC SPA (see also response to OR1.5 and OR 1.6 [REP3-057]. For all of the above reasons, Natural England consider it appropriate to use the mean max foraging range plus 1SD to establish connectivity for guillemot and razorbill at FFC SPA as standard, which has generally been accepted by the SoS in recent consenting decisions (DESNZ 2025[62]), and maintain our previous advice that we do not consider site selection to be an effective embedded mitigation measure for the Projects with respect to FFC SPA seabird features.	
REP5-060:7b	**b) Response to Applicant's comments in REP4-087 on why they do not consider density hotspot modelling to be appropriate for investigating mitigation options** *See also our responses to OR 1.5, OR 1.6, and OR 1.39 [REP3-057]* Natural England note that the Applicant does not consider density hotspot modelling to be an appropriate way of investigating potential boundary changes as ornithological mitigation because of the variability of seabird distributions over time. However, while seabirds are mobile animals, their distributions during the breeding season are constrained as central-place foragers to areas within foraging range, and their distribution is also strongly affected by the availability of prey (Evans et al 2021[63], de la Cruz et al 2022[64], Legard et al 2025[65]). Seabirds are known to aggregate in areas where prey availability is high (Oppel et al 2018[66]). As detailed above, the Projects are located are located within the Dogger Bank SAC, in an area that is important for sandeel (Dunn 2021[60], Langton 202161) and therefore likely to attract seabirds breeding at FFC SPA (see also response to OR1.5 and OR 1.6 [REP3-057]. Furthermore, sandeel are a relatively sedentary species that show limited mobility and are strongly associated with discrete areas of particular sediment types (van der Kooij et al 2008[67], Jensen et al 2011[68]). Van der Kooij et al. (2008) demonstrated that, during their daily movements, sandeel in the Dogger Bank remained within a few kilometers of the substrate in which they burrow overnight. Areas within the Dogger Bank with high abundance of sandeels are therefore likely to represent a consistent source of food for foraging seabirds. In addition, tracking data from kittiwakes breeding at FFC SPA (Wischnewski et al 2017[59]) show that the 50% core utilisation distribution overlaps with the Project areas (see Figure 2, [REP3-057]). This demonstrates repeated use of the same area by kittiwakes breeding at FFC SPA, as	The Applicants do not disagree that hotspot modelling as proposed by Natural England has a role to play in the strategic assessments used to identify suitable sites for wind farm development, however within the constraints of the Projects themselves, the lease boundaries of which are fixed, and the data collection up to 4km from these boundaries there is very limited scope for hotspot modelling (beyond that which the Applicants already summarised in an attachment to the Dogger Bank South Offshore Ornithology Pre-ES ETG minutes (see **Appendix F - Non-statutory consultation and engagement** [APP-043]) to be used since any further reductions in the developable area within the lease boundaries would risk making the Projects economically unviable.

[60] Dunn, E. 2021. Revive our Seas: The case for stronger regulation of sandeel fisheries in UK waters. RSPB Report. Available at: [redacted]

[61] Langton, R., Boulcott, P. and Wright, P. 2021. A verified distribution model for the lesser sandeel Ammodytes marinus. Marine Ecology Progress Series 667, 145–159.

[62] DESNZ (2025) Habitat Regulations Assessment for an Application under the Planning Act 2008: Rampion 2 Offshore Wind Farm.

[63] Evans, R., Lea, M.A. and Hindell, M.A., 2021. Predicting the distribution of foraging seabirds during a period of heightened environmental variability. Ecological Applications, 31(5), p.e02343.

[64] de la Cruz, A., Ramos, F., Tornero, J., Rincón, M.M., Jiménez, M.P. and Arroyo, G.M., 2022. Seabird distribution is better predicted by abundance of prey than oceanography. A case study in the Gulf of Cadiz (SW, Iberian Peninsula). ICES Journal of Marine Science, 79(1), pp.204-217.

[65] Legard, M.J., Lescure, L. and Davoren, G.K., 2025. Individual consistency in foraging behaviour is influenced by prey availability in a breeding seabird. Marine Biology, 172(6), pp.1-16.

[66] Oppel, S., Bolton, M., Carneiro, A.P., Dias, M.P., Green, J.A., Masello, J.F., Phillips, R.A., Owen, E., Quillfeldt, P., Beard, A. and Bertrand, S. 2018. Spatial scales of marine conservation management for breeding seabirds. Marine Policy, 98, 37–46.

[67] van der Kooij, J., Scott, B.E. and Mackinson, S., 2008. The effects of environmental factors on daytime sandeel distribution and abundance on the Dogger Bank. Journal of Sea Research, 60(3), pp.201-209.

[68] Jensen, H., Rindorf, A., Wright, P.J. and Mosegaard, H., 2011. Inferring the location and scale of mixing between habitat areas of lesser sandeel through information from the fishery. ICES Journal of Marine Science, 68(1), pp.43-51.

Action No	Natural England's Response	Applicants' Response
	the 50% core utilisation distribution represents an area where, at any given time, it is expected to find 50% of a given population. Studies have also shown consistent spatial use of areas of high prey availability by razorbill (Legard et al 2025) and guillemot (Dunn et al 2022[69]), and Dunn et al (2022) also found that guillemots preferentially used 'high energy gain' areas that were associated with sandeel fisheries. Natural England further note that if, as the Applicant claims, there are no areas of consistent high usage by seabirds within the Project areas, then the density hotspot modelling we have requested will indicate this. If, however, it was to demonstrate consistent areas of high usage, then the potential for array reductions to mitigate the Projects' impacts should be investigated, as was the case with other OWF with substantial predicted impacts to FFC SPA species (Hornsea 4, Outer Dowsing OWF). We therefore continue to advise, as we have done since the pre-application phase (ETG Meeting dated 6th February 2024) that density hotspot modelling should be provided, and we consider that the Applicant's refusal to do so contradicts their statement that they have done everything feasible to mitigate impacts on offshore ornithology. We advise that, given the end of the Examination is nearer, this should be considered the priority action for the Applicant as regards offshore ornithology.	
REP5-060:10a	**Action no 10. Response to Applicants' comments on density dependence modelling and the range of potential future growth rates for PVAs** *See also our response to OR 1.41 [REP3-057]* Natural England acknowledge the Applicant's comments, however they do not consider our advice in full. Our previous advice on the need to consider realistic future population trends for seabirds have clearly included several different components: density dependence, potential future impacts of climate change, and potential future impacts of HPAI. However, the Applicant has focussed solely on the issue of density dependence in their responses. Our current position with respect to these concerns is detailed below. **a) Density dependence** Natural England strongly disagree with the Applicant's statement that it would be straightforward to incorporate density dependence into PVAs for FFC SPA, despite the lack of site-specific evidence for density dependent mechanisms. Recent studies on density dependence in seabirds have found it to be extremely complex and difficult to quantify, varying between species and colonies, with mechanisms likely being influenced by metapopulation dynamics and environmental variation, and with the data required to elucidate these mechanisms being largely lacking (Searle et al 2022[70], Jeglinski et al 2023[71], Merrall et al 2024[72]). Searle et al (2022) state that variation in density dependence across UK seabird colonies is	The Applicants consider that their position on the use of density dependence in Population Viability Analysis (PVA) is robust, and model results presented with from density dependent simulations would provide a useful and informative alternative to the density independent results required by Natural England. Simulation models such as PVA are often at their most valuable when used to explore the behaviour of a system which is poorly understood, such as seabird population dynamics. As the Applicants have repeatedly stated, with some clear and appropriate assumptions, density dependence could be easily incorporated in the PVA. Nevertheless, the Applicants do not consider this is a topic on which further discussion will result in agreement with Natural England during the timeframes of this Examination and have provided density independent PVA as requested by Natural England. PVA results for wind farm assessment are specifically formulated as 'counterfactuals', which are calculated as the population metrics of interest obtained from an impacted simulation divided by the same metrics from a baseline (unimpacted) simulation, i.e. the result is a ratio with a value of 1 if there is no difference between the impact and baseline and less than 1 for all levels of impact. This approach allows the effects of the impact (i.e. wind farm) to be considered in isolation from other possible influences and this is entirely appropriate since it is the potential effects of the wind farm which are the purpose of the impact assessment. The other considerations Natural England have raised here (e.g. climate change, Highly Pathogenic Avian Influenza (HPAI), fisheries) apply to both impact and baseline simulations and therefore their effects are cancelled out in the PVA results. The use of counterfactual measures for PVA interpretation was in large part driven by their relative insensitivity to parameter misspecification (i.e. realistic changes in the survival rate or productivity rate will not have a large effect on the counterfactual estimates) because the same rates are used in both the impacted and baseline simulations (albeit with the impacted rates adjusted to account for the impact). Therefore, since external factors such as HPAI, climate change and prey fish stocks which may influence seabird

[69] Dunn, R.E., Green, J.A., Wanless, S., Harris, M.P., Newell, M.A., Bogdanova, M.I., Horswill, C., Daunt, F. and Matthiopoulos, J., 2022. Modelling and mapping how common guillemots balance their energy budgets over a full annual cycle. Functional Ecology, 36(7), pp.1612-1626

[70] Searle, K.R., Butler, A., Waggitt, J.J., Evans, P.G., Bogdanova, M.I., Hobbs, N.T., Daunt, F. and Wanless, S., 2022. Opposing effects of spatiotemporal variation in resources and temporal variation in climate on density dependent population growth in seabirds. Journal of Animal Ecology, 91(12), pp.2384-2399.

[71] Jeglinski, J.W., Wanless, S., Murray, S., Barrett, R.T., Gardarsson, A., Harris, M.P., Dierschke, J., Strøm, H., Lorentsen, S.H. and Matthiopoulos, J., 2023. Metapopulation regulation acts at multiple spatial scales: Insights from a century of seabird colony census data. Ecological Monographs, 93(2), p.e1569.

[72] Merrall, E., Green, J.A., Robinson, L.A., Butler, A., Wood, M.J., Newell, M.A., Black, J., Daunt, F. and Horswill, C., 2024. Incorporating density-dependent regulation into impact assessments for seabirds. Journal of Applied Ecology, 61(10), pp.2510-2524.

Action No	Natural England's Response	Applicants' Response
	affected by changes in climate and food availability, and likely by the numbers of non-breeders in a population, all for which data are sorely lacking. Jeglinski et al (2023) found that density dependence at gannet colonies varied widely and was likely affected by connectivity between colonies, which is difficult to quantify based on existing data. Merrall et al (2024) investigated options for incorporating density dependence into seabird impact assessments, with inconclusive results. It is also clear from Merrall et al (2024) that demographic processes should be considered on a site-by-site basis and not generalised across populations. It also states that sufficient demographic data is only available for a very small number of UK colonies, which do not include FFC SPA, or indeed any other colonies of comparable size. Natural England do acknowledge that, if appropriately parametrised, incorporating density-dependence into population models is likely to result in more ecologically realistic outcomes. We note that work is ongoing to establish the most appropriate methods for incorporating density-dependence into assessments. However, there is currently no empirical evidence available to quantify density dependent mechanisms operating at the relevant population scales for the species impacted by the Projects. We therefore maintain our advice on running PVAs without density dependence is appropriate, and continue to advise that potential future effects of density dependence in FFC SPA seabird populations are best incorporated into the assessment by considering a range of potential future growth rates (see d) Appropriate Approach, below).	populations are present in the demographic rates used for both impacted and baseline simulations these effects do not influence the ability of the models to provide predictions for the wind farm impacts of interest. The Applicants consider that their position on the use of density dependence in Population Viability Analysis (PVA) is robust, and model results presented with from density dependent simulations would provide a useful and informative alternative to the density independent results required by Natural England. Simulation models such as PVA are often at their most valuable when used to explore the behaviour of a system which is poorly understood, such as seabird population dynamics. As the Applicants have repeatedly stated, with some clear and appropriate assumptions, density dependence could be easily incorporated in the PVA. Nevertheless, the Applicants do not consider this is a topic on which further discussion will result in agreement with Natural England during the timeframes of this Examination and have provided density independent PVA as requested by Natural England. PVA results for wind farm assessment are specifically formulated as 'counterfactuals', which are calculated as the population metrics of interest obtained from an impacted simulation divided by the same metrics from a baseline (unimpacted) simulation, i.e. the result is a ratio with a value of 1 if there is no difference between the impact and baseline and less than 1 for all levels of impact. This approach allows the effects of the impact (i.e. wind farm) to be considered in isolation from other possible influences and this is entirely appropriate since it is the potential effects of the wind farm which are the purpose of the impact assessment. The other considerations Natural England have raised here (e.g. climate change, Highly Pathogenic Avian Influenza (HPAI), fisheries) apply to both impact and baseline simulations and therefore their effects are cancelled out in the PVA results. The use of counterfactual measures for PVA interpretation was in large part driven by their relative insensitivity to parameter misspecification (i.e. realistic changes in the survival rate or productivity rate will not have a large effect on the counterfactual estimates) because the same rates are used in both the impacted and baseline simulations (albeit with the impacted rates adjusted to account for the impact). Therefore, since external factors such as HPAI, climate change and prey fish stocks which may influence seabird populations are present in the demographic rates used for both impacted and baseline simulations these effects do not influence the ability of the models to provide predictions for the wind farm impacts of interest. The Applicants also query Natural England's citation (Merrall *et al.* 2024) in support of not including density dependence in PVA since the concluding paragraph of their study's summary states: *We suggest that a density-dependent approach when performing PVA-based assessments for seabird populations will prevent biologically unrealistic, unconstrained population growth and therefore ensure meaningful PVA metrics in populations experiencing negative regulation. It will also maintain a precautionary approach for populations experiencing positive regulation, crucial when estimating impacts for these more vulnerable populations. These conclusions have immediate international application within the consenting processes for marine industries.* They also state: *In this study, we provide support for incorporating density-dependent regulation into seabird impact assessments used during the consenting process for marine industrial developments, such as offshore wind farms.* And: *…we highlight the importance of caution in the use of PVA in consenting decisions, especially where population-specific data is lacking. More broadly, our study provides evidence that incorporating density-dependent regulation may produce more meaningful assessments of future impact on protected populations.*

Action No	Natural England's Response	Applicants' Response
		The above notwithstanding, the Applicants have updated the PVA for Deadline 6 (following investigations to address a Natural England comment on the PVA made in REP5-058). However, the Applicants do not consider these changes have made any material difference to the outcome of the assessment for the following reasons: • PVA have been presented for all recent wind farm applications and the predicted impacts on the relevant populations are already well understood to a very large degree. • The results of the PVA do not change any of Natural England's existing conclusions on the presence/absence of: ○ Project alone significant impacts (EIA); ○ Cumulative significant impacts (EIA); ○ Project alone Adverse Effect on Integrity (AEoI) (HRA); or ○ In-combination AEoI (HRA).
REP5-060:10b	**b) Climate change** Natural England note that the Applicant has not acknowledged our comments about the need to consider potential future impacts of climate change on seabird populations when interpreting the results of PVAs. Natural England agree with the statements made by the Applicant around possible future impacts of climate change in paragraph 73 of APP4-033: *"Future decreases in kittiwake breeding numbers are likely to be particularly pronounced, as kittiwakes are very sensitive to climate change"* And in paragraph 74: *"Fulmars, terns, common guillemot, razorbill and puffin appear to be highly vulnerable to climate change, so numbers may decline over the next few decades"* We note that Stanbury et al (2024)[73] highlights that many seabird populations are predicted to decline further in future, due to the effects of climate change. In Great Britain, modelling has predicted that by 2050, kittiwake will decline by 55%, guillemot by 46.4% and razorbill by 46.3% (Davies et al. 2023[74], Stanbury et al. 2024[73]). However, the Applicant has not considered the potential future impacts of climate change on seabird populations when interpreting the results of their PVAs, as Natural England previously advised.	See response to REP5-060:10a above.
REP5-060:10c	**c) HPAI** The Applicant has not addressed Natural England's previous advice [REP3-057 & AS-161] on the need to consider potential impacts of HPAI on seabird populations when interpreting the results of PVAs. This highlighted, additional to the concerns above, the potential for longer term impacts of HPAI on seabird populations, concerns about the resilience of affected populations and the ongoing need for more evidence on the impacts of HPAI on seabird populations (Stanbury et al 2024[73], Tremlett et al 2024[75]). Natural England therefore continue to advise that impacts of HPAI and the potential for future population impacts highlights the need for	See response to REP5-060:10a above.

[73] Stanbury, A.J., Burns, F., Aebischer, N.J., Baker, H., Balmer, D.E., Brown, A., Dunn, T., Lindley, P., Murphy, M., Noble, D.G. and Owens, R. 2024. The status of the UK's breeding seabirds: an. British Birds, 117, pp.471-487.
[74] Davies, J. G., Humphreys, E. M., Evans, T., Howells, R. J., Hara-Murray, R. O. and PearceHiggins, J. W. 2023. Seabird abundances projected to decline in response to climate change in Britain and Ireland. Mar. Ecol. Prog. Ser. 725: 121–140.
[75] Tremlett, C.J., Morley, N., and Wilson, L.J. 2024. UK seabird colony counts in 2023 following the 2021-22 outbreak of Highly Pathogenic Avian Influenza. RSPB Research Report 76. RSPB Centre for Conservation Science, RSPB, The Lodge, Sandy, Bedfordshire, SG19 2DL. Available online at [redacted]

Action No	Natural England's Response	Applicants' Response
	precaution when assessing the significance of impacts of additional pressures such as offshore wind farms.	
REP5-060:10d	**d) Appropriate approach** Natural England refer the Applicant to our Deadline 2 advice [AS-159] to consider the approach taken by Sheringham & Dudgeon Extension Projects (SEP&DEP), which considered a range of potential future growth rates. The percentage reduction in growth rate calculated from the PVA results is currently based on an assumption that the population in question will continue to grow as it has done in recent decades. However, for the reasons outlined above, this is unlikely to be the case. Whilst quantifying the future effects of these factors on population trends is extremely difficult, Natural England advise that it is appropriate to consider the percentage reduction in growth rate for a range of future growth rate scenarios, as demonstrated by SEP&DEP. This would allow decision-makers to consider the likelihood of SPA conservation objectives being met for a range of potential future scenarios.	See response to REP5-060:10a above.

2.13 Natural England - Risks and Issues Log

Table 2-26 – The Applicants' response to Natural England's Deadline 5 Risks and Issues Log [REP5-061]

I.D.	Natural England Response	RAG Status	Applicants' Response
Draft Development Consent Order (Revision 6) [REP3-004]			
REP5-061: A4	Initial Relevant Representation - *The requirement wording should be updated to state which environmental topics will be included within the Code of Construction Practice (CoCP). Paragraph (4) should be amended to note that the relevant SNCB will be consulted by the relevant planning authority prior to the approval of any pre-commencement screening and fencing works. The production of the final soil management plan is not secured in the DCO wording. We advise this could be included within this requirement (Schedule 2, Part 1, Req. 19).* Deadline 5 Status - Issue progressed. We maintain our advice that environmental topics that are included in the CoCP should be listed. We welcome the amendment to the Draft Development Consent Order (DCO) (Revision 7) [REP4-006] to Schedule 2, Part 1, Requirement 19(4) to include consultation with the relevant SNCB.		The Applicants maintain their position on this as set out in the **Response to Natural England's Relevant Representations** [AS-048]: *"The Applicants do not agree that there is a need to list the different environmental topics that will be included within any final Code of Construction Practice (CoCP) in requirement 19 of the Draft DCO [APP-027]. The Outline Code of Construction Practice (OCoCP) [APP-234] includes construction mitigation from all onshore ES Chapters 18 to 30 [APP-140 to APP-225]. Section 5 sets out the general site operation measures and section 6 the management of onshore environmental issues for each of the relevant environmental topics.* *Table 3-1 of the OCoCP [APP-234] also describes the outline documents that form appendices to the OCoCP [APP-234]. Because any final CoCP submitted and approved under requirement 19 must accord with the OCoCP [APP-234], it is implicit that the listed documents in Table 3-1 and environmental topics included in section 6 of the OCoCP [APP-234] will also be included within or, appended to any final CoCP. It is therefore not necessary to update the wording of requirement 19."*
REP5-061: A15	Initial Relevant Representation - *The Development Consent Order (DCO) does not contain an end date for deployment of cable protection for within and outside of designated sites. Natural England's standard advice is that cable protection should only be deployed for a maximum period of 10 years from the commencement of operations outside of designated sites. Within any designated sites for benthic features, such as the Dogger Bank SAC, the condition should stipulate that there should be no deployment of cable protection after the completion of construction.* Deadline 5 Status - We have reviewed the Applicant's position regarding additional and replenishment of cable / scour protection and continue to disagree with it. We do not believe it is in the spirit of the Strategic Compensation Strategy or Marine Recovery Fund. In addition, there is no certainty that the Applicant will be able to use the MRF in the way they propose as the policy is not yet final. Therefore, we advise that they are planning at own risk until the MRF launches and the guidance is published. We are in discussions with DEFRA and DESNZ benthic compensation and MRF teams (respectively) and we will provide further update at Deadline 6. Please see Appendix K5 of Natural England's response to ExQ2 MCP.2.10 in our Deadline 5 submission for further detail		The Applicants direct Natural England to the response provided to REP5-053:5.3 in **Table 2-6** of this document.
REP5-061: A20	Initial Relevant Representation - *The definition of maintain should be consistent between the DCO and OOOMP. See A1.* Deadline 5 Status – No change.		The Applicants maintain their position as detailed in response to REP3-060: A1 in T**he Applicants' Responses to Deadline 3 Documents and Additional Submissions** [REP4-088] and repeated below for convenience. *The definition of "maintain" is already linked to the Environmental Statement – it includes the words "to the extent assessed in the Environmental Statement". It is also the same as the definition of "maintain" used in the* ***Outline Offshore Operations and Maintenance Plan (OOOMP) (Revision 3)*** *[REP2-045] (see paragraph 5 of that document),*

I.D.	Natural England Response	RAG Status	Applicants' Response
			albeit the definition in the OOOMP uses slightly different language, for example "inspection" rather than "inspect" and "adjustment" rather than "adjust". Therefore, the Applicants remain of the position that no amendments are required to the definition of "maintain" and would hope that this can be agreed with Natural England. To allow the similarities of the definitions of 'maintain' within the **Draft Development Consent Order (DCO) (Revision 9)** [document reference 3.1] and the **OOOMP (Revision 3)** [REP2-045] to be clearly understood, these are presented one above the other below. The definition of maintain in the **Draft DCO (Revision 9)** [document reference 3.1] is as follows: *"maintain" includes inspect, upkeep, repair, adjust, alter, and further includes remove, reconstruct and replace (including replenishment of cable protection), but does not include the removal, reconstruction or replacement of foundations associated with the authorised project, to the extent assessed in the environmental statement; and any derivation of "maintain" must be construed accordingly* The definition of maintain in the **OOOMP (Revision 3)** [REP2-045] is as follows: *A full definition of maintain is provided in Volume 3, Draft Development Consent Order (application ref: 3.1), including within each Deemed Marine Licence (DML).* *As such, the definition of 'maintain' is taken to include inspection, upkeep, repair, adjustment, alteration, removal, reconstruction and replacement (including replenishment of cable protection), but does not include the removal, reconstruction or replacement of foundations associated with the authorised scheme, to the extent assessed in the environmental statement. "Maintenance" must be construed accordingly to the extent assessed in the respective receptor chapter of the ES.*
Outline Offshore Operations and Maintenance Plan (Revision 3) [REP2-045]			
REP5-061: A21	Initial Relevant Representation - *Natural England is concerned about what is and is not permitted as part of the DCO/dML through this named plan, in relation to replacement of cable protection over the lifetime of the project and any 'allowances' for new cable protection. We advise that further cable protection and scour prevention within Dogger Bank SAC would require a new marine licence, and that outside of the SAC a register should be kept and summited annually to the MMO on any placement of cable protection. This should include the volume, footprint and locations to ensue commitments have been adhered to and indirect impacts to designated sites avoided. See A15, A22.* Deadline 5 Status - No change - please see Point A15 for further information regarding our advice on scour / cable protection replenishment.		The Applicants direct Natural England to the response provided to REP5-053:5.3 in **Table 2-6** of this document.
Marine Physical Environment			
REP5-061: B5	Initial Relevant Representation - *For the Operational impact "Cable Repairs and Reburial", the activity has been described, but no associated LSE pathways have been included. The Applicant should specify the LSEs and provide the MDS for each activity during operation (for all build scenarios). The WCS impact on each MPA and affected features should also be provided for direct and indirect effects. (7.8: Table 8-1)*		The Applicants confirm that an updated version of **Chapter 8 - Marine Physical Environment** [APP-080] will be submitted at Deadline 7 and will include the worst-case operational impacts of cable repairs and reburial on relevant protected sites in Appendix A of **The Applicants' Responses to Deadline 3 Documents and Additional Submissions** [REP4-088].

I.D.	Natural England Response	RAG Status	Applicants' Response
	Deadline 5 status - Issue progressed. The Applicant has provided worst-case operational impacts of cable repairs and reburial on relevant protected sites in Appendix A of [REP4-088]. We understand that updates to ES documents will be submitted at Deadline 7 and will provide further comment accordingly.		
REP5-061: B7	Initial Relevant Representation - *We advise that a commitment is made and secured in the DCO to remove all on and above seabed infrastructure associated with the development within benthic designated sites (excluding cable crossings). Without this, the WCS should assess the impacts of leaving assets permanently in situ rather than restricting to the operational lifetime. (7.8).* Deadline 5 status - No change. We have reviewed the Applicant's position regarding infrastructure decommissioning and continue to disagree with it. We do not believe it is in the spirit of the Strategic Compensation Strategy or Marine Recovery Fund. In addition, there is no certainty that the Applicant will be able to use the MRF in the way they propose as the policy is not yet final. Therefore, we advise that they are planning at own risk until the MRF launches and the guidance is published. We are in discussions with DEFRA and DESNZ benthic compensation and MRF teams (respectively) and we will provide further update at Deadline 6.		The Applicants direct Natural England to the response provided to REP5-053:5.3 in **Table 2-6** of this document.
REP5-061: B14	Initial Relevant Representation - *The potential impacts of extending North Turnpikes Road to the beach/cliffs are unclear. We advise that further details are provided on the emergency intertidal access design including coastal morphology and sensitive habitats that may be affected by its presence. Any environmental impacts associated with its construction, operation, and subsequent removal should be fully considered and assessed. (7.5)* Deadline 5 status - No change - we maintain our previous advice. See Natural England's response to ExQ2 MCP.2.1 in Appendix K5 of Natural England's Deadline 5 submission for further detail.		The Applicants direct Natural England to the response provided to REP5-062: MCP.2.1 in **The Applicants' Comments on the Responses to ExAQ2** [document reference: 16.3].
REP5-061: B15	Initial Relevant Representation - *Jack up barges, other vessels, equipment, and infrastructure may be used for trenchless landfall exit works during the different development phases. The Applicant should consider and assess all potential impacts to seabed and coastal morphology that may arise due to trenchless landfall works during the lifetime of the Projects. (7.8)* Deadline 5 status - No change. The Applicant has stated in [REP4-088] that the change to project design (removal of short trenchless crossing at landfall) results in a change to the receptors assessed and that such assessment in relation to landfall works will be updated in a landfall technical note to be submitted at Deadline 5, and included in the updated ES chapter to be submitted at Deadline 7. We will provide comment accordingly.		The Applicants confirm that an updated version of **Chapter 8 - Marine Physical Environment** [APP-080] will be submitted at Deadline 7 and will include the updated landfall assessment work as detailed in the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP4-088] report issued at Deadline 5.
REP5-061: B17	Initial Relevant Representation - *Removal or modification of sandwaves within the OECC and array areas could adversely affect nearby sandbanks, seabed*		The Applicants direct Natural England to the response provided to REP5-054: B2 in **Table 2-9** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	topography, and affect flow and sediment transport patterns. All efforts should be made to avoid areas of sandwaves and/or minimise the need for sandwave levelling/pre-sweeping by micro-routing. If possible, dredged material should be placed to aid natural infilling of trenches. Best practice should be followed to assess and minimise potential impacts to sandwave/sandbank systems. The proposed pre- and post-construction monitoring should be used to assess geomorphological recovery after cable installation. (7.5, 7.8) Deadline 5 status - Issue progressed. Whilst stronger commitments to mitigation are required, Natural England is satisfied with the assessment for sandwave clearance in the export cable corridor in relation to suspended sediment concentrations. See Appendix B5 of Natural England's Deadline 5 submission for further detail.		
REP5-061: B19	Initial Relevant Representation - *Hydrodynamic model results show lower current speeds (shadow effects) along the western boundary of the Arrays, but also increased current speeds inside the Arrays. Similarly, there are shadow areas in the difference plots for bed shear stress with areas of reduced bed shear stress adjacent to the western DBS W Array boundary and to the west and east of the DBS E Array boundary, but with areas of increased bed shear stress within the Arrays. The implications of predicted changes to current speeds and bed shear stress over the lifespan of the Projects need to be fully considered in terms of seabed sediment composition, sediment mobility, and seabed morphology of the Dogger Bank SAC. (7.8)* Deadline 5 status - No change. We continue to advise that the Applicant needs to consider how the predicted changes (reductions and increases) in tidal current speeds and bed shear stress will affect patterns of erosion and deposition and seabed morphology within and adjacent to the arrays over the 30 year project lifespan. Furthermore, consideration should be given to changes in seabed heterogeneity over the lifespan of the project.		The Applicants will provide an updated assessment of changes to bedload sediment transport over the operation lifetime of the Projects in the updated version of **Chapter 8 Marine Physical Environment** [APP-080] to be submitted at Deadline 7.
REP5-061: B22	Initial Relevant Representation - *We do not agree with the conclusions of the EIA or cumulative effects assessments for the Flamborough Front during Operation and Maintenance.* *We advise the Applicant should seek to reduce impacts as much as possible through consideration of the placement of foundation structures and reducing the WCS for foundation structures within Array Areas. Owing to the ecological importance of the Flamborough Front, and emerging evidence that suggests large OWF clusters (i.e. Dogger Bank) may result in substantial impacts on stratification, currents, and sediment resuspension; we also advise that the Applicant should commit to monitoring potential changes to stratification, currents, and productivity (pre-construction, post-construction, lifetime). The results of monitoring should be combined with those from other nearby OWFs and with up-to-date research such as from the University of Hull. (7.8, 8.7.3.4)*		The Applicants direct Natural England to the responses regarding the Flamborough Front provided in **Table 2-10** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	Deadline 5 status - Issue progressed. There is no change to the significance of effect (in EIA terms) in the re-assessment of impacts to Flamborough Front as provided in [REP4-092] 14.7 Review of Flamborough Front. Whilst we welcome the proposed monitoring, we continue to advise that a precautionary approach be adopted for the impact assessment. See Appendix B5 of Natural England's Deadline 5 submission for further detail.		
REP5-061: B25	Initial Relevant Representation - *We advise that the value of both Dogger Bank and Smithic Bank is high. This should be taken into consideration by the Applicant and their assessment updated where necessary. (7.8)* Deadline 4 status - No change. The Applicant has indicated in [REP4-088] and in their Written Summaries of Oral Submissions at ISH5 [REP4-086] that as Dogger Bank is not a sand bank in terms of morphology (rather a complex set of glacial landforms covered with a veneer of sand), therefore they did not assign it a high value. Natural England directs the ExA and competent authority for the HRA to the conservation objectives for Dogger Bank SAC which sets out the high value of this Annex I sandbank. The SNCBs fundamentally disagree with the Applicant on this. Having thoroughly considered this, we do not believe that resolution will occur during examination. Therefore unless there is a change in the Applicant's position, our position will remain unchanged for the remainder of the examination In addition, we advise that Smithic Bank is a Feature of Conservation Importance with a high value due to providing shelter to the northern part of the Holderness Coast including the town of Bridlington and also has wider ecological importance.		The Applicants have assigned Dogger Bank as having high value and will update the significance of effect accordingly within the updated version of **Chapter 8 Marine Physical Environment** [APP-080] to be submitted at Deadline 7. The Applicants maintain that in this case the value of Annex 1 habitat is intrinsically considered as part of the Habitats Regulations Assessment (HRA) process. As far as the Environmental Impact Assessment (EIA) is concerned boundaries of designated sites are not relevant. If in the EIA, receptors are accorded higher sensitivity based on value and not ecological sensitivity, this strays into the HRA. Where value could be used, for example, would be if there was a Habitat or Species of Principal Importance outwith a designated site which would not be otherwise captured within the HRA or Marine Conservation Zone Assessment (MCZA) process, which is not relevant in this instance. Natural England state Smithic Bank is a feature of conservation importance but as it is not designated, it is not clear what features of the sand bank are considered to have conservation importance and how they relate to marine physical processes. Following the definitions of value provided in Table 8-9 of **Chapter 8 Marine Physical Environment** [APP-080], Smithic Bank is assigned a low value as it "is not designated but is of local importance for marine geology, oceanography or physical processes (including water quality)". For the receptor to be assigned medium value, it would need to be of regional importance, but it is a local feature, confined to the lee of Flamborough Head.
REP4-129: B26	Initial Relevant Representation - *Supporting evidence for seabed recovery from installation vessels has been provided based on pre-installation (2010) and post-removal surveys (2022) for two Met Masts in DBB and C OWFs (i.e. after a period of 12 years). There is insufficient information behind the conclusion that the duration, reversibility and, thus, magnitude of impact on seabed morphology will be low. Consequently, we are unable to agree with the assessment conclusion that effect significance will be negligible. The Applicant should provide further evidence for seabed recovery following installation vessel impacts. Additional mitigation should be explored to minimise impacts to the seabed morphology at Dogger Bank and the SAC during construction and Operation and Maintenance activities. (8.8).* Deadline 5 Status – No Change. Natural England maintain our previous advice.		While the Applicants maintain their position as detailed in the Deadline 3 response above, jack-up footprints with regards to potential habitat loss will be included on a without prejudice basis in the next revision of **RIAA HRA Part 2 of 4 – Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-015]. The Applicants note that if the Secretary of State (SoS) concludes that habitat disturbance contributes to Adverse Effects on Integrity (AEoI) then the jacking-up footprint would be within the disturbance footprint and therefore already taken into account. Therefore, the footprint of jacking up should only be added to the permanent habitat loss footprint a) if SoS agrees that this is not a temporary disturbance impact and b) if the SoS agrees with the Applicants that other construction disturbance is temporary and does not contribute to AEoI.
REP4-129: B27	Initial Relevant Representation - *The sensitivity of Dogger Bank (and Dogger Bank SAC) to changes in seabed level from certain construction activities has been assessed as negligible. We advise that these construction activities and similar O&M activities are likely to result in changes to the extent and distribution and physical structure of the site's sandbank feature, which will further hinder its restore objective(s). (a) Further mitigation measures should be adopted and secured*		The Applicants have committed to mitigation in the form of pre- and post construction monitoring of changes in seabed level and sediment transport regime, including scour processes. These are outlined in the **In Principle Monitoring Plan (Revision 4)** [REP5-027] and secured in Condition 15 of Deemed Marine Licences (DMLs) 1 and 2; Condition 13 of DMLs 3 and 4, and Condition 11 of DML5 of the **Draft DCO (Revision 9)** [document reference: 3.1]. With reference to the definition of value for Dogger Bank and Smithic Bank, see response to REP5-061: B25 above.

I.D.	Natural England Response	RAG Status	Applicants' Response
	to minimise impacts. (b) Pre and post-construction monitoring should be committed to to validate predictions of seabed elevation change and extent of deposition, sediment composition and distribution change, and seabed recovery across the Array Areas and Inter-Platform Corridor within Dogger Bank SAC. Should impacts be found to be greater than predicted then the necessary recourse should be taken. (8.7.3.6) Deadline 4 status - No Change. The Applicant has indicated in [REP4-088] and in their Written Summaries of Oral Submissions at ISH5 [REP4-086] that as Dogger Bank is not a sand bank in terms of morphology (rather a complex set of glacial landforms covered with a veneer of sand), therefore they did not assign it a high value. Natural England directs the ExA and competent authority for the HRA to the conservation objectives for Dogger Bank SAC which sets out the high value of this Annex I sandbank. The SNCBs fundamentally disagree with the Applicant on this. Having thoroughly considered this, we do not beleive that resolution will occur during examination. Therefore unless there is a change in the Applicant's position, our position will remain unchanged for the remainder of the examination In addition, we advise that Smithic Bank is a Feature of Conservation Important with a high value due to providing shelter to the northern part of the Holderness Coast including the town of Bridlington and also has wider ecological importance. With regards to further assessment and monitoring requirements for sandwave monitoring, please refer to our detailed IPMP comments submitted at Deadline 3 with overarching concerns [REP3-056] as well as Appendix B5 of Natural England's Deadline 5 submission for further detail.		
REP5-061: B32	Initial Relevant Representation - *For Annex 1 features of the Humber Estuary SAC, Section 6.6.1.1 of the RIAA only lists 'Sandbanks which are slightly covered by seawater all the time' and 'Mudflats and sandflats not covered by seawater at low tide' as having been assessed, despite more features being listed as screened in for assessment. We advise that the full list of features identified at Screening should be assessed in the RIAA. (6.1.1, 6.1)* Deadline 5 status - Issue resolved. The Applicant has screened in all relevant features for the Humber Estuary SAC in the updated RIAA [REP4-015].		The Applicants welcome Natural England's agreement on this matter.
REP5-061: B34	Initial Relevant Representation - *Our concerns raised for the overall EIA in relation to impacts from cable installation and operation are all also relevant within the MCZ assessment. The MCZ Stage 1 impact assessment should be updated based on the comments provided on the impact assessment. (8.17)* Deadline 5 status – No change.		As stated in **The Applicants' Responses to Deadline 4 Documents** [REP5-037]: *The Applicants highlight the additional information with regards to indirect effects on the underlying biotopes present within the Holderness Inshore MCZ is presented in **Benthic Ecology Technical Note (Revision 2)** [REP3-025], which provided further evidence that the biotopes present in within the Holderness Inshore MCZ are not sensitive to the potential levels of sediment re-suspension and deposition that may result from the Projects.* *With regards to the potential impacts on the Spurn Head geological feature of the Holderness Inshore MCZ, the Applicants have submitted the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [document reference 15.6] at Deadline 5 which demonstrates the limited effects that cable protection in the nearshore*

I.D.	Natural England Response	RAG Status	Applicants' Response
			environment would have, with the modelling indicating the scale of the effect would be extremely small with a <1% reduction of the annual net sediment transport budget. The modelling is focused on wave generated currents given they are the principal driver of sediment movement in the vicinity of the Projects' landfall location. Given this negligible reduction in annual net sediment transport budge, there will be no significant interruption to the existing sediment transport processes to the MCZ and the Spurn Head geological feature. *In light of this additional information submitted into Examination, the Applicants confirm that an updated version of the* ***Stage 1 Marine Conservation Zone Assessment*** *[APP-240] will be submitted at Deadline 7 to incorporate the information provided in* ***Benthic Ecology Technical Note (Revision 2)*** *[REP3-025] and* ***Assessment of Coastal Processes at the Dogger Bank South Landfall*** *[document reference 15.6], and to reflect the latest design parameters of the Projects.*
REP5-061: B36	Initial Relevant Representation - *The impacts assessment does not consider sandwave levelling along the export cable corridor. We advise against deposition of sand in locations where SSC and deposition become significantly elevated above baseline level and suggest this is secured in the commitments register. (8.17)* Deadline 5 status - Issue progressed. We are satisfied with the Applicant's assessment predictions that sediment deposition from trenching and levelling for the offshore export cable corridor is predicted to be localised and the seabed recoverable, however this is dependent on the appropriate mitigation being secured. Please see Appendix B5 of Natural England's Deadline 5 submission for further detail.		The Applicants direct Natural England to the response provided to REP5-054: B2 in **Table 2-9** of this document.
REP5-061: B41	Initial Relevant Representation - *The conservation objectives for the Holderness Inshore MCZ could be hindered due to the current dML condition allowing 10% of the export cable to be protected from 350m seaward of MLWS to the 10m depth contour. This could disrupt sediment transport associated with Holderness Inshore MCZ. (8.17).* Deadline 5 status - No change. The Applicant has indicated [REP4-088] that a technical note will be provided at Deadline 5 regarding the potential effects of cable protection measures on sediment transport in the nearshore environment. We will provide further comments accordingly.		The Applicants await Natural England's comments on the **Assessment of Coastal Processes at the Dogger Bank South Landfall** [REP5-040] issued at Deadline 5.
REP5-061: B46.1	Initial comment - *It is stated in [REP2-036] that within the arrays, seabed level could be increased by up to 0.5m where multiple cable corridors merge, but in practice the cable layout will be designed to avoid this - we require clarity on how and where this will be secured.* Deadline 5 Status - No change. The Applicant has stated [REP4-088] the "*0.5m increase in seabed level is in reference to the worst-case increase in sediment accumulation calculated in the marine physical processes modelling undertaken for the Projects*" and that they are unable to secure a change in seabed level of up to 0.5m as sediment transport isn't static. We request the Applicant to clarify how avoiding exceedance of the worst-case increase of 0.5m will be carried out and associated control measures.		Avoiding the circumstances which could lead to an exceedance of the worst case increase of 0.5m sediment accumulation will be undertaken as part of the cable layout design. The requirement for the final cable layout for the Projects (which will be designed to avoid multiple cable corridors merging together) to be approved by the MMO in consultation with the relevant statutory nature conservation body (i.e. Natural England) is secured under Condition 15 (1)(a)(iii) of DMLs 1 & 2, Condition 13 (1)(a)(iii) of DMLs 3 & 4 and Condition 11(1)(a)(iii) of DML 5 of the **Draft DCO (Revision 9)** [document reference: 3.1]. The post-construction monitoring plan for the Marine Physical Environment (detailed in Table 1-2 of the **In Principle Monitoring Plan (Revision 4)** [REP5-027] would assess for potential sediment accumulation in areas where any cable corridors merged. The In Principle Monitoring Plan is secured in Condition 15 of DMLs 1 and 2; Condition 13 of DMLs 3 and 4, and Condition 11 of DML5 of the **Draft DCO (Revision 9)** [document reference: 3.1].

I.D.	Natural England Response	RAG Status	Applicants' Response
REP5-061: B49	Initial Relevant Representation - *This document will need updating pre-consent based on comments Natural England has provided on the EIA within Appendix B and C, as we currently do not agree with conclusions included within the document. (8.20)* Deadline 5 status - Natural England welcomes that the Cable Statement [REP4-051] has been updated with a commitment to deposit like sediment on like sediment both within and beyond the boundary of Dogger Bank SAC during sandwave levelling. We maintain our previous advice for a figure to be provided identifying cable burial risks. Please see Appendix B5 of Natural England's Deadline 5 submission for further detail.		A figure presenting the indicative locations of cable protection in relation to nearby designated site boundaries has been included in the updated **Cable Statement (Revision 5)** [document reference: 8.20] issued at Deadline 6.
REP5-061: B50	Initial comment - *The estimated maximum dredge volumes for ECR options B and C, based on the 2022 bathymetry, are 227,886m3 and 297,391m3 respectively. However, it is unclear how these values relate to the Maximum Design scenario (MDS) parameters presented in either ES Chapter 8 [APP-080] or the Project Change Request 1 [AS-141]. We require the Applicant's clarification on the MDS dredge volume values for the ECR .* Deadline 5 status - No change. The Applicant has clarified [REP4-088] that the offshore export cable route (ECR) dredge volumes in the Cable Statement [REP4-051] are indicative locations that may require dredging based on the most recent site-specific bathymetric (2022) data, whereas the WCS assessed in the ES Chapter 8 Marine Physical Environment [APP-080] and Offshore Works Change Request [AS-141] were based on a worst-case scenario whereby dredging would occur along the entire length of the export cable route (ECR). However, we are concerned that an error has been made in the values presented in [AS-141] and advise that further justification is needed for the volumes as applied for. Please see Appendix B5 of Natural England's Deadline 5 submission for further detail.		The Applicants direct Natural England to the response provided to REP5-054: B15 in **Table 2-12** of this document.
Benthic & Intertidal Ecology			
REP5-061: C2	Initial Relevant Representation - *It is suggested that cable protection may be used at the landfall exits, however there is a commitment to not use cable protection in the intertidal area and/or for 350m seaward of Mean Low Water Springs (MLWS). This also contradicts cable landfall activities set out in the Project Description and MCZ Stage 1 assessment that only describe cables being buried and exit pits naturally backfilling. We advise that clarity is provided on the use of cable protection at the Horizontal Direction Drilling (HDD) exit pits. (7.05).* Deadline 5 Status - The Applicant has stated [REP4-088] that the "intention is to bury the cables at landfall punchout" and that if this is "not possible then protection could be used" which is accounted for within the existing worst case scenario. We advise that clarification is provided on whether the exit pits could		The Applicants confirm that the subtidal exit pits would not be located within 350m seaward of mean low water springs. This commitment has been added to an update of the Cable Statement submitted at Deadline 6.

I.D.	Natural England Response	RAG Status	Applicants' Response
	fall within 350m seaward of MLWS where there is a commitment to not use cable protection.		
REP5-061: C4	Initial Relevant Representation - *Clarity is needed on how the potential for the addition of further cable/scour protection during the operational phase has been considered and included within the worst-case calculations for cable/scour protection. It is unclear whether figures provided in the Offshore Operations and Maintenance Plan (OOMP; APP-248) for replacement cable protection for the export cables have been integrated into the Project Description. Estimates for cable protection replacement requirements for the inter-array and inter-platform cables have also not been provided. We advise that the standard for quantities of additional scour and/or cable protection outside of benthic SACs is for the replenishment of 10% of any scour prevention/cable protection laid during installation within a 10-year period, as long as the overall footprint is not increased. Any additional scour prevention/cable protection during the operational phase within a designated site will require a separate Marine Licence. See C13 below. (7.05, 8.24)* Deadline 5 status - No change. We have reviewed the Applicant's position regarding additional and replenishment of cable / scour protection and continue to disagree with it. We do not believe it is in the spirit of the Strategic Compensation Strategy or Marine Recovery Fund. In addition, there is no certainty that the Applicant will be able to use the MRF in the way they propose as the policy is not yet final. Therefore, we advise that they are planning at own risk until the MRF launches and the guidance is published. We are in discussions with DEFRA and DESNZ benthic compensation and MRF teams (respectively) and we will provide further update at D6.		The Applicants direct Natural England to the response provided to REP5-053:5.3 in **Table 2-6** of this document.
REP5-061: C5	Initial Relevant Representation - *We are concerned that Table 2-3 of the OOMP indicates that the Applicant considers the lifetime footprints presented in the Project Description to be allowances for cable protection to be installed at any point through the lifetime of the Projects, rather than the amount that will be required for the construction phase alone, which will subsequently have a footprint and impact for the lifetime of the project. We advise that the maximum design parameters for the ECC and array area, including the lifetime footprint, should be revised to only include cable/scour protection anticipated to be installed during construction. The OOMP should also be updated to reflect the licensing requirements for additional protection installed within Dogger Bank SAC during operation. (7.05, 8.25)* Deadline 5 status - No change. We have reviewed the Applicant's position regarding additional and replenishment of cable / scour protection and continue to disagree with it. We do not believe it is in the spirit of the Strategic Compensation Strategy or Marine Recovery Fund. In addition, there is no certainty that the Applicant will be able to use the MRF in the way they propose as the policy is not yet final. Therefore, we advise that they are planning at own		The Applicants direct Natural England to the response provided to REP5-053:5.3 in **Table 2-6** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	risk until the MRF launches and the guidance is published. We are in discussions with DEFRA and DESNZ benthic compensation and MRF teams (respectively) and we will provide further update at D6.		
REP5-061: C7	Initial Relevant Representation - *The Applicant has not sufficiently characterised benthic receptors within Flamborough Head SAC. All benthic receptors within the ZoI, particularly those within designated sites, need to be sufficiently characterised to enable a robust, evidenced assessment to be undertaken and presented. In the absence of characterisation of benthic receptors at a suitable resolution, the WCS needs to be presented (e.g. most sensitive biotope within the broadscale habitat used as a basis for assessments) to consider the sensitivity or recoverability of the benthic receptors to the identified pressure pathways. (7.09, 6.1)* Deadline 5 status - Issue progressed. This has been updated in the Applicant's RIAA [REP4-015], but should also be included within an updated ES chapter.		The Applicants confirm that the updates presented in the **Benthic Ecology Technical Note (Revision 2)** [REP3-025] will be incorporated into the Environmental Statement (ES) at Deadline 7.
REP5-061: C9	Initial Relevant Representation - *It is unclear how the 'value' of receptors has been consistently incorporated into the assessment process. The Applicant has considered all biotopes within the red line boundary, with the exception of those characterised by piddocks, to be of low value. This includes biotopes representative of Annex 1 habitat within Dogger Bank SAC, and no consideration has been given to biotopes within Flamborough Head SAC. We advise that the methods and rationale for valuing benthic receptors, and how value has been used within the assessment process, is reviewed and documents updated accordingly. The significance of impacts on all benthic receptors should thereafter be reassessed. (7.09)* Deadline 5 status - Issue progressed. Natural England's concerns on characterisation of benthic receptors for Flamborough Head SAC have been addressed - see Point C7. However, we maintain our previous advice with regards to the valuing of other receptors, particularly those which contribute to Annex I feature and will be subject to permanent loss/change. See Appendix C5 of Natural England's Deadline 5 submission for further details.		The Applicants direct Natural England to the response provided to REP5-055:C9 in **Table 2-14** of this document.
REP5-061: C13	Initial Relevant Representation - *We advise that the Applicant commits to bundling the export cables for each project as mitigation - this would halve the number of trenches needed (from two to one for each array) and reduce cable protection requirements. (7.05)* Deadline 5 status - Issue satisfactorily resolved. Whilst we would welcome this being conditioned within the DCO, we are satisfied with the Applicant's response [REP4-088] and that the updates to the Cable Statement, Commitments Register and RIAA sufficiently secure this commitment.		The Applicants welcome Natural England's agreement on this matter.

I.D.	Natural England Response	RAG Status	Applicants' Response
REP5-061: C16	Initial Relevant Representation - *We do not agree that an AEoI can be excluded from the disturbance/damage of Annex I sandbanks within the Dogger Bank SAC. Unlike more dynamic sandbanks, the length of time for recovery could be up to 25 years. We highlight that the R4 Plan Level benthic compensation includes the requirement for benthic compensation for disturbance/damage caused to Annex I 'glacial till' Annex I Sandbanks within Dogger Bank SAC. (6.1)* Deadline 5 status - No change. Natural England notes from the Applicants response to ExQ1 [REP4-087 page 76] that we continue to disagree in relation to this matter. Having thoroughly considered this, we do not believe that resolution will occur during examination. Therefore unless there is a change in the Applicant's position, our position will remain unchanged for the remainder of the examination.		Following a meeting held with Natural England on 8th May 2025, the Applicants agree that an agreement on this matter is unlikely to be reached. The Applicants highlight that the worst case for disturbance effects have been provided in **Project Change Request 1 – Offshore and Intertidal Works** [AS-141] and have been included in the updated revision of the **RIAA HRA Part 2 of 4 - Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014] submitted at Deadline 4. This is also reflected in the updated **Appendix 3 Project Level Dogger Bank Compensation Plan (Revision 3)** [REP4-028] submitted at Deadline 4 which includes the disturbance footprint on a without-prejudice basis. This information will allow the Secretary of State to determine the footprint contributing to Adverse Effect on Integrity should they concur with Natural England's advice.
REP5-061: C17	Initial Relevant Representation - *Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion, should be screened in for the Operation and Maintenance phase for Dogger Bank SAC. (6.1)* Deadline 5 status - Issue resolved. Tables 6-4 and 6-6 of the updated (6.1) Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 2 of 4 [REP4-015] have been updated to include this effect.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: C25	Initial Relevant Representation - *A drill arising footprint has not been provided. The placement of drill arisings adjacent to turbines may result in further habitat loss/change. As mitigation, the Applicant should commit to the placement of drill arisings in areas of similar habitat/particle size. Otherwise, this will need to be assessed similar to that of scour prevention/cable protection as a lasting impact included within the AEoI for Dogger Bank SAC and commitments to remove at the time of decommissioning will be required. (6.1)* Deadline 5 status - No change. We maintain our previous advice. We note that the Applicant has updated Table 1-3 of the IPMP [REP4-053] stating "*Should drilling be utilised to install piled foundations, the Applicants will seek to ensure that no drill mounds (i.e. sediment arising from the drilling of the Projects foundations) persist above 3m from the surrounding seabed. In the event that such drill mounds greater than 3m are found to persist, an appropriate monitoring campaign will be developed in consultation with the MMO*". However, we maintain that drill arisings, should be deposited within similar sediment. We continue to query the feasibility of placing drill arising adjacent to the turbines therefore if it can be guaranteed that they will be in the footprint of any scour prevention. In addition, if within the scour prevention and cable protection footprint it compromises any commitments to only utilise removable material i.e. not rock. We also query what would happen in the likely event that it moves into surrounding Annex I sandbanks noting that arisings are not likely to behave the same as Norwegian granite designed to protect infrastructure. We advise this all requires further consideration		The Applicants maintain the position previously outlined in REP4-127:C4 of **The Applicants' Responses to Deadline 4 Documents** [REP5-037]: *'During drilling, the drilling platform would sit on top of the monopile being installed, as drilling progresses the arising are discharged into the sea as part of the drilling process, remaining in close proximity to the drilling location whilst minimising interference with any pre-installed scour protection or planned cable corridors. The Applicants have no intention to interfere/move the arisings once deposited on the seabed.'*

I.D.	Natural England Response	RAG Status	Applicants' Response
REP5-061: C33	Initial Relevant Representation - *The whole of the offshore windfarm array footprints, the inter-cable platform corridor and the export cable corridors will be disposal locations, but deposition will only occur where possible within the same sediment. Given that sandwave levelling is likely to be undertaken by suction hopper dredge and then sediment released at the sea surface, it is unlikely that this will occur. We advise that disposal options are explored to ensure that sediment is deposited in similar sediment types.* Deadline 5 status - Issue progressed. The Applicant has committed to depositing like sediment on like sediment both within and outside of Dogger Bank SAC in the updated Cable Statement, this should be secured in the Commitment Register. Please see Appendix B5 for further advice on outstanding mitigation measures.		The Applicants direct Natural England to the response provided to REP5-054: B2 in **Table 2-9** of this document.
REP5-061: C36	Initial Relevant Representation - *We advise that this document needs to better consider risk and implications of secondary scouring and highlight the need to minimise environmental impacts through choice of scour prevention / cable protection.* Deadline 5 status - No change - no new information relevant to this issue has been submitted at this deadline.		The Applicants have added further detail and a firmer commitment to monitoring the performance and integrity of scour protection and secondary scour to the **In Principle Monitoring Plan (Revision 4)** [REP5-027], submitted at Deadline 5.
REP5-061: C37	Initial comment - *We highlight that as the final SCP will be provided post-consent, if the impacts of plastic-based scour protection have not been included and/or fully assessed as part of the Application Environmental Statement/RIAA, a further assessment will be required at that time. And depending on the outcome may require an additional HRA assessment to inform Condition Discharge.* Deadline 5 Status - Issue Progressed. Whilst the Applicant acknowledges that use of plastics associated with scour/cable protection will require further assessment in [REP4-088], we advise that to resolve this matter a named plan should be updated to commit to considering this pre construction when final design plans are submitted.		In line with this request, the Applicants have submitted an update to the **Outline Scour Protection Plan (Revision 4**) [document reference: 8.27] at Deadline 6 to note that, should they be selected for use, relevant assessments of the impacts of plastic-based scour protection will be included in the final Scour Protection Plans submitted to discharge relevant conditions (e.g. condition 15(1)(c)(ii) of DML 1) presented in the DMLs in the **Draft DCO (Revision 9)** [document reference: 3.1].
REP5-061: C38	Initial Relevant Representation - *This document will need updating pre-consent based on comments Natural England has provided on the EIA within Appendix B and C, as we currently do not agree with conclusions included within the document. (8.20).* Deadline 5 status - Natural England welcomes that the Cable Statement [REP4-051] has been updated with a commitment to deposit like sediment on like sediment both within and beyond the boundary of Dogger Bank SAC during sandwave levelling. We maintain our previous advice for a figure to be provided identifying cable burial risks. Please see Appendix B5 of Natural England's Deadline 5 submission for further detail.		A figure presenting the indicative locations of cable protection in relation to nearby designated site boundaries has been included in the updated **Cable Statement (Revision 5)** [document reference: 8.20] submitted at Deadline 6.

I.D.	Natural England Response	RAG Status	Applicants' Response
Benthic Compensation - Detailed comments			
REP5-061: D2	Initial Relevant Representation - *The SNCBs have outstanding concerns about the outcomes of the Impact Assessment and evidence used to support conclusions on scale and significance of potential impacts from cable installation activities and cable protection installation from DBS. Until these issues are resolved we do not agree with the scale and extent of the compensation measures required. This compensation measure will be led by DEFRA (with interested parties), therefore delivery mechanisms, scale costs and timeframes presented by the Applicant cannot and should not be relied upon.* Deadline 5 Status - No change. We have reviewed the Applicant's position regarding infrastructure decommissioning and continue to disagree with it. We do not believe it is in the spirit of the Strategic Compensation Strategy or Marine Recovery Fund. In addition, there is no certainty that the Applicant will be able to use the MRF in the way they propose as the policy is not yet final. Therefore, we advise that they are planning at own risk until the MRF launches and the guidance is published. We are in discussions with DEFRA and DESNZ benthic compensation and MRF teams (respectively) and we will provide further update at Deadline 6.		The Applicants direct Natural England to the response provided to REP5-053:5.3 in **Table 2-6** of this document regarding infrastructure decommissioning. Regarding the scale and extent of compensation measures required, while the Applicants maintain the worst-case habitat loss calculations presented to date are accurate and well-justified, the **RIAA HRA Part 2 of 4 Annex I Offshore Habitats and Annex II Migratory Fish (Revision 4)** [REP4-014], **Habitats Regulations Derogation: Provision of Evidence (Revision 3)** [REP4-018] and **Project Level Dogger Bank Compensation Plan (Revision 3)** [REP4-028] will be updated at Deadline 7 to include without prejudice estimates for habitat loss including UXO clearance areas and jack-up footprints, as previously requested by Natural England. This will provide the Secretary of State with the necessary information to determine the scale of required compensation should they concur with Natural England's reasoning on this matter.
REP5-061: D21	Initial Relevant Representation - *The Dogger Bank Strategic Compensation Plan (DBSCP) and the project compensation do not align, with the exclusion of compensation requirements for damage to sandbanks. Benthic compensation measures for habitat disturbance of Annex I sandbanks from the project level compensation documents are omitted. We would fully expect the DCO to include compensation for both habitat loss and damage. Further consideration should be given to Plan Level compensation requirements as agreed by the Secretary of State for the Depart of Energy Security and Net Zero.* Deadline 5 status - No change. The Applicant has updated (6.2) Habitats Regulations Derogation Provision of [REP4-019] and RIAA - HRA - Appendix 3 - Project Level Dogger Bank Compensation Plan - Volume 6 [REP4-028] stating "that there is no evidence to substantiate that there could be AEoI from 'halo effects' in habitats such as those found within the Dogger Bank". Natural England disagrees with this - see Appendix C5 of Natural England's Deadline 5 submission for further details.		See the Applicants' responses regarding halo effects in REP5-055:C4 – C6 and REP5-055:C10 in **Table 2-14** of this document.
Fish and Shellfish Ecology			
REP5-061: E3	Initial Relevant Representation - *Further clarity is needed regarding simultaneous piling for monopiles for the in-isolation development scenario. For two monopiles installed simultaneously, the worst-case scenario for underwater noise and vibration impacts on sandeel would be two simultaneous monopile piling events in*		The Applicants would like to note that sandeel do not possess a swim bladder which is involved in hearing and so the impact ranges for the effects of mortality and recoverable injury are highly localised. However, the Applicants responded to the point regarding the worst case scenario in **The Applicants' Responses to Deadline 3 Documents and Additional Submissions** [REP4-088] (REP3-060: E3): *'As discussed in the **Illustrative Noise Reduction Technical Note** [REP4-094], the Applicants explain that:*

I.D.	Natural England Response	RAG Status	Applicants' Response
	the DBS West array area. We advise that underwater noise models are provided for the worst-case scenario in each build out scenario. Deadline 5 Status - No change - no new information relevant to this issue has been submitted at this deadline. Natural England would like to highlight a wording error in our Deadline 3 R&I Log that was intended to ask: Natural England require further clarification as to why information on monopiling has not been provided when assessing impacts of DBS West and East together. This was in relation to [AS-141] 10.49 Project Change Request 1 – Offshore and Intertidal Works.		*'Within the original Environmental Impact Assessment, separate scenarios were presented for the Projects in isolation and together as described within section 10.6.1.3.5. of* ***Chapter 10 Fish and Shellfish Ecology*** *[APP-091]. These scenarios aimed to maximise spatial extent of underwater noise impacts to ensure the assessment of a worst case scenario applicable to all receptor groups.* *The together scenario was represented by three simultaneous pin piles at DBS East, DBS West, and at the Offshore Export Cable Corridor Electrical Switching Platform (ESP). This scenario maximised both spatial extent, and temporal extent due to the increased piling time required for the installation of pin piles.* *For the in isolation scenario two simultaneous monopile installations were considered within the Array Areas, with no simultaneous piling to occur at the ESP. In this scenario a precautionary approach to modelling was used to simplify assessment clarity whilst ensuring a worst case assessment was undertaken. Separation between the two piling locations within the Array Areas (the north most location at DBS West, and the south most location at DBS East) was used, rather than using two piling locations within a single Array Area as would be realistic in the in isolation scenario. This precautionary approach over-estimated the spatial extent of underwater noise in the in isolation scenario, but improved the clarity of the assessment.* *Following revisions to project design presented within* ***Project Change Request 1 – Offshore and Intertidal Works*** *[AS-141] and* ***Appendix A: Fish and Shellfish Environmental Assessment Update*** *[AS-142] the potential for piling at the ESP was removed from assessment. In terms of temporal impacts, simultaneous pin piling at two locations remains the worst case scenario for the together assessment (maximising temporal extent). However, in terms of spatial impact, which remains the key consideration when determining potential impacts on Atlantic herring in this Technical Note, simultaneous monopiling at the same two locations that were used in the original assessment remained the worst case scenario for the in isolation scenario (maximising spatial extent). For the purposes of this Technical Note, therefore, the in isolation scenario is the same as the worst case together scenario.'*
REP5-061: E8	Initial Relevant Representation - *Impacts from localised heating from the cables have been assessed in reference to water temperature increase, with no specific receptors identified as being impacted. Further assessment is required for localised heating of sediment and possible impacts to high/very high potential sandeel and herring spawning habitat.* Deadline 5 status - No change. Natural England maintains our previous advice. For further information see Appendix E5 and our response to Issue Specific Hearing Action 27.		The Applicants direct Natural England to the response provided to REP5-056: E3 in **Table 2-17** of this document.
REP5-061: E9	Initial Relevant Representation - *Clarity is needed on how localised impacts on high potential spawning habitat loss due to cable protection have been assessed for sandeel and Atlantic herring.* Deadline 5 status - No change. Natural England maintains our previous advice. For further information see Appendix E5 and our response to Issue Specific Hearing Action 27.		The Applicants direct Natural England to the response provided to REP5-056: E2 in **Table 2-17** of this document.
REP5-061: E13	Initial Relevant Representation - *Evidence for habituation has been based on ship/trawl noise and seismic air guns. We advise that habituation should not be*		The Applicants welcome Natural England's agreement on this matter.

I.D.	Natural England Response	RAG Status	Applicants' Response
	taken into account within the assessment without provision of more appropriate supporting evidence for impulsive piling noise. Deadline 5 Status - Issue Resolved. We welcome the response outlined in 14.4 The Applicant's Response to Deadline 3 Documents, and now consider this issue resolved.		
REP5-061: E17	Initial Relevant Representation - *Suitable references and evidence should be provided to support statements used in the impact assessment to conclude negligible or minor adverse impacts (i.e. that receptors can recover from impacts within 2-10 years).* Deadline 5 Status - No change - no new information relevant to this issue has been submitted at this deadline.		The Applicants maintain the position as detailed in RR-039: E 6 of the **Response to Natural England's Relevant Representations (including Appendices A - F, and I)** [AS-048], repeated below for convenience: *'Recovery period is one of a number of factors used in the determination of magnitude (alongside likelihood, and variation from background). Magnitude has been considered alongside sensitivity (which itself is determined based on a number of factors) for the determination of impact and potential significance.* *The justification for recovery periods is provided within the 'magnitude' section of each impact assessed and may be determined using references and evidence where available, alongside expert judgement to contextualise this potential magnitude.* *Prescriptive recovery periods for recovery of fish and shellfish populations to the impacts assessed within the ES are rarely, if ever available due to the extent of development-specific factors that must be considered on a case-by-case basis when undertaking offshore EIAs. In many cases the 2-10 year recovery period that makes up one part of the determination of magnitude is conservative to account for this uncertainty.'* The Applicants note that despite Natural England stating 'no change' in the Risks and Issues Log at Deadline 3 forwards on this matter, no further advice from Natural England has been received on this matter since the Applicants provided a response in RR-039: E 6 of the **Response to Natural England's Relevant Representations (including Appendices A - F, and I)** [AS-048].
Marine Mammals			
REP5-061: F4	Initial Relevant Representation – *Permanent Threshold Shift (PTS) should be scoped into the Cumulative Effects Assessment. We do not agree that the mitigation outlined in the MMMP and ES is sufficient to minimise the risk of injury for all PTS impact ranges (see below). Further, due to the nature of marine mammals, mitigation cannot guarantee that no animals will be at risk of PTS.* Deadline 5 status - No change. The Applicant has acknowledged that in line with Defra Guidance, all offshore wind farms are required to use primary and/or secondary noise management measures, and this will mitigate any risk of cumulative Permanent Threshold Shift. However, the Applicant will also not commit to delivering additional primary or secondary mitigation, despite currently being unable to mitigate their full injury zone. Natural England maintain our advice that additional mitigation should be committed to. See Appendix F5 for further detail.		As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 9)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The Applicants are engaging with Natural England on the condition wording submitted.
REP5-061: F6	Initial Relevant Representation – *The maximum predicted PTS impact range for a single pile installation is 13 km for harbour porpoise and 26 km for minke whales.*		As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 9)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g))

I.D.	Natural England Response	RAG Status	Applicants' Response
	These distances are too large to effectively be mitigated by Acoustic Deterrent Devices (ADDs). The Applicant needs to demonstrate how the full PTS impact range will be mitigated to ensure no injury is caused to marine mammals. Alternatively, the PTS impact range needs to be reduced to ensure ADDs can effectively deter animals from the zone of injury within 80 minutes (maximum PTS range will need to be 7.2 km for harbour porpoise and 15.6 km for minke whale). This could be achieved my reducing the maximum hammer energy in the Project envelope, or by committing to the use of NAS to reduce the sound at source. Deadline 5 status - No change. Natural England welcomes the submission of the Illustrative Underwater Noise Reduction Technical Note at Deadline 4, and agrees that were a 10dB noise reduction to be applied, the full PTS impact range could be mitigated via ADDs. However, the Applicant has not committed to delivering this reduction. We advise the Applicant to commit to reducing the estimated noise by 10dB via primary and/or secondary mitigation, with the exact methods to be deployed determined post-consent. See Appendix F5 for further detail.		submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The Applicants are engaging with Natural England on the condition wording submitted
REP5-061: F7	Initial Relevant Representation - *The predicted maximum injury zone for some UXO clearance events is larger than the area for many ADDs to effectively deter marine mammals from. Provide planned ADD durations to demonstrate that the maximum injury zone for UXO clearance can be mitigated. If this is not possible, additional mitigation or methods to reduce the sound at source should be investigated.* Deadline 5 Status - Issue resolved. Natural England welcomes the Applicant's updates to the outline MMMP to include low order methods as default for UXO removal, and to use NAS where high order is unavoidable. Natural England advises that UXO clearance with and without additional mitigation measures including ADD durations, are presented in the final UXO clearance MMMP and UXO clearance Marine Licence Application.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: F8	Initial Relevant Representation - *Natural England supports increasing the Monitoring Area (MA) to ensure it is greater than the maximum predicted impact range for PTS. Consideration should be given to how this zone can be effectively monitored to ensure all marine mammals can be detected. This may require using more marine mammal observers (MMObs) and implementing stricter limits on workable weather conditions. The MMMP should be updated as needed.* Deadline 5 Status - No Change. Whilst Natural England welcomes the demonstrated impact reductions outlined in the Underwater Noise Reduction Technical Note [REP4-094], we advise that this reduction in noise is committed to, and then included in updated modelling and the MMMP. Please see Appendix F5 for further detail.		The Applicants confirm that underwater noise modelling report requested by Natural England was submitted at Deadline 5 as Appendix A of the **Illustrative Underwater Noise Technical Note (Revision 2)** [REP5-032]. As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 9)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The Applicants are engaging with Natural England on the condition wording submitted Updates to the MA would be confirmed post consent through the final MMMP based on the underwater noise modelling informed by the final project design and incorporated primary and / or secondary noise reduction methods.
REP5-061: F11	Initial Relevant Representation - *Natural England does not agree that the mitigated impacts of Permanent Threshold Shift (PTS) from piling are minor*		As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 8)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g))

I.D.	Natural England Response	RAG Status	Applicants' Response
	adverse - negligible for all marine mammals (See F5-F7). These conclusions are hinged on mitigation outlined in the MMMP which is not currently sufficient to fully mitigate the predicted PTS impacts. *To ensure the impacts from underwater noise caused by piling are reduced for marine mammals we advise that the sound is reduced at source, this could be by modifying the design envelope (e.g. reducing the maximum hammer energy) or by using Noise Abatement Systems.* Deadline 5 Status -No Change. Whilst Natural England welcomes the demonstrated impact reductions outlined in the Underwater Noise Reduction Technical Note [REP4-094], we advise that this reduction in noise is committed to and then reflected in updated ES documents as needed. See Appendix F5 for further detail.		submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The Applicants are engaging with Natural England on the condition wording submitted The Applicants will include updates to the **Chapter 11 Marine Mammal**s [APP-095] at Deadline 7 to reference primary and/or secondary noise reduction measures incorporated into the MMMP and SIP and reference to the latest guidance. It is maintained that the worst-case effects and assessments have been presented in **Chapter 11 - Marine Mammal**s [APP-095] and that without the confirmed final project design and reductions based on confirmed suite of mitigation measures, no further updates can be made at this time.
REP5-061: F12	Initial Relevant Representation - *To reduce impact of piling in the Offshore Export Cable Corridor (OECC) on grey seals, we advise the Applicant commits to changing the design envelope (e.g. foundation bases with lower construction noise, reduced hammer energy) or the use of NAS to reduce the sound at source.* Deadline 5 Status - Issue resolved. Natural England are closing out this issue as aspects relating to the ECC have been addressed. Our outstanding concerns with grey seal impacts will be focussed in F14, F18 and F19.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: F13	Initial Relevant Representation - *The number of Harbour porpoise potentially disturbed during single piling at DBS East, DBS West and both projects together is high, with up to 12.53% of the North Sea Management Unit (MU) disturbed. We consider this should result in a Major Adverse impact score. The Applicant has concluded minor adverse based on the results of iPCoD modelling alone. The EIA assessment should be updated based on the highest predicted impact values, for all receptors and pathways (not using iPCoD). Where a significant impact cannot be ruled out, the mitigation hierarchy should be explored to reduce the potential impacts.* Deadline 5 Status - No Change. No new information relevant to this issue has been submitted at this deadline. The Applicant has stated that they will present updates to the Interim Population Consequence of Disturbance modelling in a revision of the Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 3 of 4 - Annex II Marine Mammals (Revision 3) [APP-047] at Deadline 5. Natural England will therefore provide further comment on this at Deadline 6.		The information presented in **Appendix B Marine Mammal Environmental Statement Update** [AS-143] of the **Project Change Request 1 – Offshore and Intertidal Works** [AS-141] and **Marine Mammal Technical note: Significance of Effect for disturbance from piling and cumulative underwater noise** (document reference 13.6) will be incorporated in to **Chapter 11 – Marine Mammals (Revision 2**) (document reference 7.11) at Deadline 7 along with the requested updates to the iPCoD modelling (mean and 95% CI) and a population level stressor qualitative assessment. This will incorporate the same scope of changes presented in the **RIAA HRA Part 3 of 4 - Annex II Marine Mammals (Revision 3)** [REP5-009] at Deadline 5.
REP5-061: F14	Initial Relevant Representation - *The number of grey seals disturbed during single piling at DBS East, DBS West and both projects together is high, with up to 30.62% of the South-East England MU disturbed. Using the number of animals potentially disturbed, the magnitude of impact is high, resulting in an impact score of moderate (significant). The EIA assessment should be updated based on the highest*		The information presented in **Appendix B Marine Mammal Environmental Statement Update** [AS-143] of the **Project Change Request 1 – Offshore and Intertidal Works** [AS-141] and **Marine Mammal Technical note: Significance of Effect for disturbance from piling and cumulative underwater noise** [REP3-031] will be incorporated in to **Chapter 11 – Marine Mammals (Revision 2**) (document reference 7.11) at Deadline 7 along with the requested updates to the iPCoD modelling (mean and 95% CI) and a population level stressor qualitative

I.D.	Natural England Response	RAG Status	Applicants' Response
	predicted impact values. Where a significant impact cannot be ruled out, the mitigation hierarchy should be explored to reduce the potential impacts. Deadline 5 Status - No Change. No new information relevant to this issue has been submitted at this deadline. The Applicant has stated that they will present updates to the Interim Population Consequence of Disturbance modelling in a revision of the Report to Inform Appropriate Assessment (RIAA) Habitats Regulations Assessment (HRA) Part 3 of 4 - Annex II Marine Mammals (Revision 3) [APP-047] at Deadline 5. Natural England will therefore provide further comment on this at Deadline 6.		assessment. This will incorporate the same scope of changes presented in the **RIAA HRA Part 3 of 4 - Annex II Marine Mammals (Revision 3)** [REP5-009] at Deadline 5. Reference and inclusion of the Defra marine noise package (2025) and the use of primary and/ or secondary methods will also be made at this time.
REP5-061: F17	Initial Relevant Representation - *The conclusions for the RIAA illustrate that the noise thresholds for the SNS SAC would be significantly breached by the Project in combination with other noisy activities. Additional mitigation will be needed to avoid an Adverse Effect on Site Integrity (AEoI), however the current approach to implementing Site Integrity Plans (SIPs) for piling impacts to the Southern North Sea SAC does not allow sufficient time for mitigation methods, such as NAS, to be procured by the Applicant prior to construction should they be required. We strongly advise that the Applicant commit to the use of specific mitigation measures including noise abatement in the Outline SIP and MMMP at this stage. We advise that the effect of noise abatement systems in reducing noise impacts should be included in the submitted assessments.* Deadline 5 Status - No Change. Natural England welcomes the submission of the Illustrative Underwater Noise Reduction Technical Note at Deadline 4, and agrees that were a 10dB noise reduction to be applied, an AEoI on SNS SAC could likely be ruled out. However, the Applicant has not committed to delivering this reduction. We advise the Applicant to commit to reducing the estimated noise by 10dB via primary and/or secondary mitigation, with the exact methods to be deployed determined post-consent. See Appendix F5 for further detail. Please see Appendix F5 for further detail.		As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 8)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The exact wording of this condition is still in discussion with Natural England.
REP5-061: F18	Initial Relevant Representation - *Natural England cannot agree to the conclusion of no AEoI on grey seals in the Humber Estuary SAC. The Applicant's assessment suggests that more than 9% of the Humber Estuary SAC grey seal population has the potential to be impacted by disturbance from piling (monopile or jacket pin pile) in the OECC. The assessment conclusions should be updated based on the highest predicted impact values. Where an AEoI cannot be ruled out, additional mitigation should be explored to avoid or reduce impacts.* Deadline 5 Status - No Change. Natural England welcomes the submission of the Illustrative Underwater Noise Reduction Technical Note at Deadline 4, and agrees that were a 10dB noise reduction to be applied, an AEoI on grey seal from the Humber Estuary SAC could likely be ruled out. However, the Applicant has not committed to delivering this reduction. We advise the Applicant to commit to reducing the estimated noise by 10dB via primary and/or secondary		As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 8)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The exact wording of this condition is still in discussion with Natural England.

I.D.	Natural England Response	RAG Status	Applicants' Response
	mitigation, with the exact methods to be deployed determined post-consent. See Appendix F5 for further detail. Please see Appendix F5 for further detail.		
REP5-061: F19	Initial Relevant Representation - *Natural England cannot agree to the conclusion of no AEoI on grey seals in the Berwickshire North Northumberland Coast (BNNC) SAC. The Applicant's assessment suggests that more than 5% (and therefore a significant number) of the BNNC SAC grey seal population could be disturbed by piling at DBS West and OECC in isolation and together using the dose response approach. The assessment conclusions should be updated based on the highest predicted impact valuesys. Where an AEoI cannot be ruled out, additional mitigation should be explored to avoid or reduce impacts.* Deadline 5 Status - No Change. Natural England welcomes the submission of the Illustrative Underwater Noise Reduction Technical Note at Deadline 4, and agrees that were a 10dB noise reduction to be applied, an AEoI on grey seal from the BNNC SAC could likely be ruled out. However, the Applicant has not committed to delivering this reduction. We advise the Applicant to commit to reducing the estimated noise by 10dB via primary and/or secondary mitigation, with the exact methods to be deployed determined post-consent. See Appendix F5 for further detail. Please see Appendix F5 for further detail.		As noted in the Applicants' response to Natural England's Appendix F5 Table 1.1 (I.D. 1) the **Draft DCO (Revision 8)** [document reference 3.1] (see Schedule 10 and 11, Condition 15 (1)(g); and Schedule 12 and 13, Condition 13 (1)(g)) submitted at Deadline 5 now includes provision for primary and /or secondary mitigation in the event that driven or part-driven pile foundations are proposed to be used which will be secured through the final MMMP. The exact wording of this condition is still in discussion with Natural England.
REP5-061: F21	Initial Comment - *Whilst Natural England welcomes the Applicant updating the DCO to include the Maximum Hammer Energy, we advise that within Section 3.1.5 of the Outline MMMP [AS-101] it is clearly stated what the Applicant's intentions are regarding the commencing hammer energy in addition to the percentage of the maximum hammer energy this represents.* Deadline 5 Status - Issue Resolved. Natural England welcomes the Applicant's updates regarding the commencing hammer energy in addition to the percentage of the maximum hammer energy this represents in the Outline MMMP. The Applicant must include confirmation of these values in the final MMMP.		The Applicants welcome Natural England's agreement on this matter and confirm these values will be included in the final MMMP.
REP5-061: F22	Initial Comment - *Natural England welcomes the Applicant's Scheduling of UXO clearance with other projects (Section 9.6 of Draft In Principle Site Integrity Plan) as a useful tool for minimising the area of disturbance on a particular day; however this method should be in addition to noise reducing technology as outlined in Defra's recently published Marine Noise Package. Natural England will provide further comment following the Applicant's review of the Defra Noise Package documents and updated assessment and mitigation measures.* Deadline 5 Status - Issue resolved. Natural England welcomes the Applicant's updates to the outline MMMP to include low order methods as default for UXO removal, and to use NAS where high order is unavoidable. Natural England advises that UXO clearance with and without additional mitigation measures,		The Applicants welcome Natural England's agreement on this matter.

I.D.	Natural England Response	RAG Status	Applicants' Response
	are presented in the final UXO clearance MMMP and UXO clearance Marine Licence Application.		
Offshore Ornithology			
REP5-061: G12	Initial Relevant Representation - *The spatial distribution figures show that high densities of auks (particularly guillemot and razorbill) were recorded in the area between the two arrays, but outside the 2km buffer. We consider it is likely that birds in this area will be vulnerable to cumulative displacement impacts from the arrays on either side. We advise that an assessment of cumulative displacement impacts on auks between the arrays is provided.* Deadline 5 Status - Issue progressed. Natural England understand that the Applicant will be submitting a cumulative displacement assessment for the full area between the two arrays at Deadline 5. This was presented to Natural England at a meeting on 7th May 2025 and we have agreed that, pending review of the full report, this will be sufficient to provide necessary context and impact conclusions would likely be unaffected.		The Applicants confirm the **Potential Auk Displacement Between Dogger Bank South Array Areas** [document reference: 16.4] report has been submitted at Deadline 6.
REP5-061: G17	Initial Relevant Representation - *We advise that disturbance and displacement impacts are screened into the cumulative assessment for Red-throated Diver and relevant mitigation measures identified e.g. use of existing shipping lanes until beyond 2km of the SPA.* Deadline 5 Status - Issue resolved. This has been addressed in the Applicant's updated assessment.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G18	Initial Relevant Representation - *Further consideration should be given to potential mitigation measures to reduce impacts on bird features, such as array reductions, changes to design and layout of arrays, or increasing the hub height of turbines. Hotspot modelling of seabird densities and distributions in the study area may help to identify areas where impacts are particularly high.* Deadline 5 Status - No Change. The Applicant maintains their position that no additional mitigation is required. Natural England maintain our previous advice and have provided further advice in response to ISH Action 7 in Appendix M5 of our Deadline 5 submission.		The Applicants refer Natural England to **Table 2-20** of this document regarding responses on ornithology mitigation.
REP5-061: G19	Initial Relevant Representation - *We cannot agree with the EIA conclusions presented due to there being outstanding concerns with several aspects of the assessment, including:* *-baseline mortality rates and EIA reference populations used (G19)* *-guillemot seasonality (G24)* *-gannet collision risk (G26)* *-approach taken to combining the impacts of the two arrays (G11)*		The Applicants welcome Natural England's agreement on this matter and direct Natural England to the Applicants' responses on the outstanding concerns in **Table 2-21** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	We advise that updated assessments are provided in line with SNCB Best Practice Guidance. Deadline 5 Status - Issue satisfactorily resolved. Natural England have some outstanding concerns which we would ideally like to be addressed, however we acknowledge that they will not affect the assessment conclusions. Please see Appendix G5 for Natural England's updated EIA conclusions.		
REP5-061: G26	Initial Relevant Representation - *The results of displacement assessments for auks using Natural England's advised range of displacement and mortality rates should be used to determine SPA features for Population Viability Analysis (PVA), and when assessing potential for AEoI at SPAs.* Deadline 5 Status - Issue resolved. This has been addressed in the Applicant's updated assessment.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G32	Initial Relevant Representation - *We advise that PVAs are carried out for the impacts of the projects alone (i.e. DBS East and West combined) on kittiwake, guillemot and razorbill at FFC SPA, as the 1% mortality rate threshold is exceeded when assessments are conducted in line with SNCB advice.* Deadline 5 Status - Issue Resolved. Natural England welcomes the Applicant's updated PVAs for these species.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G36	Initial Relevant Representation - *The initial population sizes used in the PVA for kittiwake and razorbill at FFC SPA are 91,008 and 30,673 respectively. We advise that the appropriate population sizes to use are the 2022 count figures of 89,148 (kittiwake) and 61,345 (razorbill) (Clarkson et al 202210). The PVAs for kittiwake and razorbill at FFC SPA should be re-run using the appropriate initial population sizes (Clarkson et al 2022).* Deadline 5 Status - Issue Resolved. This has been addressed in the Applicant's updated PVAs.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G37	Initial Relevant Representation - *In-combination assessments have not been carried out for a number of SPA features. We advise that it would be best practice for the Applicant carry out in-combination assessments for all SPA features that have been screened in for assessment. As a minimum, we consider that in-combination assessments should be carried out for all species that meet the 1% baseline mortality threshold (calculated according to SNCB guidance), specifically guillemot at Farne Islands SPA, and Red-throated diver at the Greater Wash SPA. We consider there would also be merit in in-combination assessments being carried out for puffins at Farne Islands SPA and FFC SPA.* Deadline 5 Status - Issue Progressed. We welcome that the Applicant has submitted in-combination assessments for guillemot at Farne Islands SPA.		The Applicants direct Natural England to the response provided to REP5-058: G7 in **Table 2-21** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	However there are still outstanding concerns around this assessment. Please see Appendix G5 for further detail.		
REP5-061: G41	Initial Relevant Representation - *The in-combination totals calculated for impacts on kittiwake, guillemot, razorbill and gannet at FFC SPA do not appear to reflect the combined impacts of the arrays with other relevant projects. We note that the most recent agreed in-combination totals are for SEP & DEP. We advise that the in-combination totals for impacts on kittiwake, guillemot, razorbill and gannet at FFC SPA be recalculated, taking into account the impacts of all relevant projects (see G51&52), the DEP&SEP values, and any updated assessments resulting from advice within this Representation.* Deadline 5 Status - No Change. The in-combination totals still do not appear to reflect the combined impacts of the arrays with other relevant projects. Please see Appendix G5 for further detail.		The Applicants direct Natural England to the responses provided to REP5-058: G5 and G6 in **Table 2-21** of this document.
REP5-061: G43	Initial Relevant Representation - *While Natural England appreciate the Applicant presenting PVA results for guillemot and razorbill considering both ends of Natural England's advised range for displacement and mortality rates (i.e. from 30% displacement and 1% mortality to 70% displacement and 10% mortality) as well as Natural England's advised adult apportioning rates, we note that only a limited number of results are presented from within this range. We advise the Applicant to present the results of the full range of displacement impacts on guillemot and razorbill in the PVA modelling.* Deadline 5 Status - Issue Progressed. This has been largely addressed, however results have not been provided for in-combination FFC SPA totals with Hornsea 4 using 70% displacement and 5% mortality.		The Applicants direct Natural England to the response provided to REP5-058: G6 in **Table 2-21** of this document.
REP5-061: G49	Initial Relevant Representation - *Interpretation of PVA results for FFC SPA gannet, kittiwake, guillemot and razorbill* *In the Applicant's interpretation of the PVA results for in-combination impacts on gannet, kittiwake, guillemot and razorbill at FFC SPA, they cite recent population growth at the SPA as a reason for concluding no AEoI is likely. Whilst we do not dispute the evidence of population growth at the colony in past years, we do not consider it appropriate to assume the same growth rate will continue over the next 30 years. It is highly likely that the populations will experience density-dependent mechanisms over the lifetime of the Project, and there are uncertainties about the long-term population impacts of HPAI and a wide range of other environmental pressures.* *We note that the Applicant has acknowledged the importance of considering density dependence and other pressures including HPAI and climate change elsewhere in the Application, but they have not considered these in their interpretation of the PVA results. Further, recent surveys have shown that UK gannet, kittiwake and guillemot populations declined by 25%, 18% and 20%*		The Applicants direct Natural England to the response provided to REP5-058: G9 and G10 in **Table 2-21** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	respectively between the results of the last seabird census which covered the period between 2015 and 2021 (Burnell et al 20234), and the summer of 2023 (Tremlett et al 20245). Natural England advise that the Applicant considers realistic assessments of current and future population trends, considering all relevant evidence, when interpreting the results of updated PVAs. Deadline 5 Status - No change. Natural England note that the Applicant has not considered potential future changes in seabird population trends (due to density dependence, climate change impacts, and HPAI impacts) when assessing the interpretation of the PVA results, as previously advised by Natural England. However, whilst we would welcome this being addressed, it will not materially impact our assessment conclusions. Please see our response to ISH Action 10 in Appendix M5 for further detail.		
REP5-061: G50	Initial Relevant Representation - *We advise that careful consideration should be given to avoiding or restricting cable installation works within 2km of the Greater Wash SPA during the over-wintering period (1st November to 31st March inclusive) to avoid adverse effects.* Deadline 5 Status - Issue resolved. Natural England welcome the clarification provided by the Applicant in [REP4-088] and are satisfied that an AEoI on Red throated diver in Greater Wash SPA can be ruled out due to the very limited interaction between the cable works area and the Greater Wash SPA and 2km buffer.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G51	Initial Relevant Representation - *We acknowledge the right of the Applicant to submit an assessment following their chosen methods, however in such circumstances an assessment should also be provided in line with SNCB advice. We are unable to comment on the assessment conclusions until such an assessment is provided.* Deadline 5 Status - Issue satisfactorily resolved. Whilst some outstanding concerns remain with in-combination values and PVAs, the Project alone assessment is now sufficient for Natural England to advise on conclusions and impact values.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G52	Initial Relevant Representation - *Natural England disagree that it can be concluded that there is no risk of AEoI to ornithology SPA features as a result of impacts on prey species, solely due to impacts being ruled out at EIA scale. Consideration has also only been given to temporary construction impacts on prey in the RIAA, rather than the indirect effects of permanent spawning habitat loss that will also occur. Please see Appendix E for our detailed comments on the indirect effects assessment.* Deadline 5 Status - No Change. Please see Appendix E5 and M5 for futher detail.		The Applicants direct Natural England to the response provided to REP5-056: E4 and REP5-056: E4.2 in **Table 2-17** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
REP5-061: G53	Initial comment - *Presentation of displacement matrices including upper and lower confidence intervals* *Whilst the Applicant has updated their displacement assessment for the arrays combined the relevant tables in ES Appendix 12-12 [APP-115] have not been updated. Natural England advise that ES Appendix 12-12 [APP-115] is updated to reflect the updated displacement assessment figures and that all displacement matrices are presented (for both EIA and the RIAA), including for the upper and lower confidence intervals. Please see Appendix G2, Table 2 for further detail.* Deadline 4 status - Issue satisfactorily resolved. Whilst displacement matrices including confidence intervals have not been submitted, the upper confidence level impact figures for auks have been provided for use in calculation of compensation quanta.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G55	Initial comment - *Great black-backed gull and lesser black-backed gull cumulative totals* *The cumulative collision totals presented for great black-backed gull and lesser black-backed gull are lower than the cumulative totals presented at SEP & DEP, despite additional impacts from several projects since the SEP&DEP examination, including those of Dogger Bank South. Natural England advise that the Applicant check the cumulative collision impacts for these species. Please see Appendix G2, Table 2 for further detail. We advise the Applicant to check the cumulative and in-combination totals for all species. Please see Appendix G2, Table 2 for further detail.* Deadline 5 status - No Change. We acknowledge that the Applicants have provided updated assessments, however the totals remain lower than expected. Please see Appendix G5 for further details.		The Applicants direct Natural England to the response provided to REP5-058: G8 in **Table 2-21** of this document.
REP5-061: G56	Initial comment - *Lack of PVAs for cumulative impact assessments* *The Applicant has not provided PVAs for cumulative EIA impacts, despite several of these amounting to increases in background mortality rates of over 1%, when assessed according to Natural England's advice. Natural England advises that the Applicant run PVAs to assess projected impacts on populations wherever cumulative impacts lead to increases in background mortality rate of greater than 1% when calculated according to Natural England's advice. Please see Appendix G2, Table 2 for further detail.* Deadline 5 status - Issue resolved. PVAs have been provided for all necessary species.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: G57	Initial comment - *Presentation of PVA inputs and outputs* *Natural England advise that the updated inputs and outputs for all PVA scenarios undertaken for the assessment are clearly presented in Appendix 7.12.12.13 to*		The Applicants direct Natural England to the response provided to REP5-058: G9 and G10 in **Table 2-21** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	reflect the updated impact values in the assessment and the PVA scenarios and results presented in the RIAA. This should include presenting the log files for all PVA scenarios undertaken, in order to enable assessment of the specification and paramaterisation of the models. *This applies to PVAs presented for both the projects alone and in-combination with other projects. Please see Appendix G2, Table 2 for further detail.* Deadline 5 status - Issue Progressed. Whilst updated PVAs have been provided some results are still not as we would expect, and so we advise the Applicant to verify the results of all PVA scenarios run for the assessment.		
REP5-061: G58	Initial comment - *In-combination totals for kittiwake at FFC SPA* *In-combination totals for impacts on kittiwake at FFC SPA appear to be lower than we would expect, given the totals presented during the SEP&DEP Examination. Natural England advise that the Applicant check in-combination figures for kittiwake at FFC SPA and correct these if necessary. Please see Appendix G2, Table 2 for further detail* Deadline 5 status - No change. Whilst we acknowledge the Applicant's comments that these discrepancies are not likely to affect the assessment conclusions or compensation quantum (REP3-028), they lead to significantly lower in-combination impacts than we would expect, and it is important that the assessment is as accurate as possible as it may be used as a reference for future projects.		The Applicants direct Natural England to the response provided to REP5-058: G5 in **Table 2-21** of this document.
REP5-061: G59	Initial comment - *In-combination totals for guillemot and razorbill at FFC SPA* *Natural England advise the Applicant to refer to the advice provided to DEP & SEP on the appropriate displacement and mortality rates to be used for the impacts of Hornsea 4 on guillemot and razorbill at FFC SPA, and update their in-combination totals accordingly. Natural England recommend that the impacts of these updated figures are then assessed by PVA. Please see Appendix G2, Table 2 for further detail.* Deadline 5 status - No change. Whilst we acknowledge the Applicant's comments that these discrepancies are not likely to affect the assessment conclusions or compensation quantum (REP3-028), they lead to significantly lower in-combination impacts than we would expect, and it is important that the assessment is as accurate as possible as it may be used as a reference for future projects.		The Applicants direct Natural England to the response provided to REP5-058: G6 in **Table 2-21** of this document.
REP5-061: G60	Initial comment – *PVA Results* *The results of several of the PVAs undertaken by the Applicant are not as we would expect. Natural England advise that the Applicant check the results of all PVA scenarios run for the assessment, and ensure that the inputs and outputs of all*		The Applicants direct Natural England to the response provided to REP5-058: G9 and G10 in **Table 2-21** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	scenarios are clearly presented, along with log files. Please see Appendix G2. Table 2 and G57 for further detail. Deadline 5 status - Issue Progressed. Whilst updated PVAs have been provided some results are still not as we would expect, and so we advise the Applicant to verify the results of all PVA scenarios run for the assessment.		
Offshore Ornithology Compensation			
REP5-061: H3	Initial Relevant Representation - *Natural England do not agree with the predicted impact values and compensation levels presented. We advise that the KCP is updated following any reassessments undertaken in response to the advice provided in Appendix G. Compensation metrics should be presented in line with both the Applicant's preferred method and SNCB guidance.* Deadline 5 Status - Issue Progressed. Natural England are now in agreement with the Project alone assessment and welcome the Applicant's presentation of compensation requirements according to the 'Hornsea 3 part 2' method. However, Natural England advise that the Applicant check the results of their calculations as the figures are not as expected. Please see Appendix H5 for further detail.		The Applicants direct Natural England to the responses provided regarding compensation calculations in **Table 2-22** of this document.
REP5-061: H5	Initial Relevant Representation - *The impacts currently predicted for the Projects alone make DBS the highest impacting project on FFC SPA kittiwake to date, and would likely result in an adverse effect on site integrity (AEoI) alone. Further consideration needs to be given to reducing the Projects' impacts, prior to the need for compensation. This could include reducing the overall array size, removing hotspots, concentrating turbines in cold spots, and/or raising the hub height to 40m above HAT.* Deadline 5 Status - No Change. The Applicant maintains their position that no additional mitigation is required. Natural England maintain our previous advice and have provided further advice in response to ISH Action 7 in Appendix M5 of our Deadline 5 submission.		The Applicants direct Natural England to **Table 2-24** of this document regarding responses on ornithology mitigation.
REP5-061: H6	Initial Relevant Representation - *The Hornsea 3 ('New Colony approach') approach should be used to determine the appropriate scale of compensation required for ANS, as recommended in the KSCP. Further discussion will also be needed on the appropriate compensation ratio and/or means of addressing uncertainty in the level of compensation provided.* Deadline 5 Status - Issue Progressed. We welcome the Applicant's presentation of compensation requirements according to the 'Hornsea 3 part 2' method, and that compensation requirements have been presented for a range of compensation ratios. However, we remain unable to advise on an appropriate specific compensation ratio at this time. Please see Appendix H5 for further detail.		The Applicants direct Natural England to the response provided to REP5-059: H10 in **Table 2-23** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
REP5-061: H7	Initial Relevant Representation - *The Applicant has incorrectly stated the upper estimate of nest provision required for DBS East, DBS West and ODOW as 5,000 nesting spaces. We advise that the 'compensation envelope' was 5,500 in the published KSCP. We also highlight that this was based on lower impact predictions than have now been submitted.* Deadline 5 Status - Issue Progressed. Natural England acknowledge the changes made to references to the KSCP compensation envelope; however we reiterate our comments regarding the envelope being based on lower impact figures than the submitted ESs have revealed. Please see our comments in Appendix H5 for further detail.		The Applicants direct Natural England to the response provided to REP5-059: H11 in **Table 2-23** of this document.
REP5-061: H8	Initial Relevant Representation - *The compensation totals presented are based on the Applicant's and ODOW's preferred approaches to the assessment. We welcome that a compensation ratio greater than 1:1 has been suggested, however a ratio of 2:1 has not been agreed. Compensation totals should be provided in line with SNCB guidance alongside the Applicant's preferred approach.* Deadline 5 Status - No change. Natural England disagree with the figures included for ODOW's compensation requirements. Please see Appendix H5 for further detail.		The Applicants direct Natural England to the response provided to REP5-059: H11 in **Table 2-23** of this document.
REP5-061: H9	Initial Relevant Representation - *ANS structures - "up to two" and "maximum capacity" suggest that fewer than two offshore ANS, each with fewer than 2,250 nesting spaces, may be considered. One offshore ANS will likely be insufficient to compensate for the impacts of the projects. We are also concerned that 4,500 nest spaces may not be sufficient to compensate for the combined impacts of the DBS projects and ODOW given the scale of DBS's impacts. The maximum provision should be revisited following any updated assessments.* Deadline 5 Status - No Change. Natural England acknowledge the changes made to the ANS design and refer to our comments in Appendix H5 for further detail.		The Applicants direct Natural England to the response provided to REP5-059: H15 in **Table 2-23** of this document.
REP5-061: H10	Initial Relevant Representation - *The Applicant's preferred delivery approach is via a collaborative agreement. We agree that this could be an appropriate route but note that there remains a lack of clarity on how the ANS would be delivered.* Deadline 5 Status - Issue progressed. Natural England welcomes that an MOU has now been signed between the Applicant and ODOW. Nevertheless we remain concerned that, in the event of ODOW not progressing, the provision of a single project-led ANS will significantly increase the risk of insufficient compensation being provided.		The Applicants direct Natural England to the response provided to REP5-059: H16 in **Table 2-23** of this document.
REP5-061: H12	Initial Relevant Representation - *Our comments on the shortlist of potential locations for the offshore ANS should be considered in any future refinement of the shortlist.*		The Applicants direct Natural England to the response provided to REP5-059: H13 in **Table 2-23** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	Deadline 5 Status - No change. Natural England welcome the additional information provided by the Applicant on the site refinement process, however it remains unclear how our previous advice has been considered. We refer to Appendix H5 for further detailed comments.		
REP5-061: H17	Initial Relevant Representation - *We recognise the current uncertainty around the implementation of strategic kittiwake compensation and whether the KCIMP is therefore needed, we consider that should confirmation be provided by DESNZ, we would expect a populated KCIMP to be submitted into the Examination.* Deadline 5 Status - Issue Resolved. Natural England welcomes the provision of the updated KCIMP, however depending on resolution of other issues, it could be beneficial to provide a further update before the close of the Examination. Please see Appendix H5 for further details.		The Applicants welcome Natural England's agreement on this matter.
REP5-061: H18	Initial Relevant Representation - *Provide an in-combination assessment of impacts on guillemot at the Farne Islands SPA and consider the need for compensation for these impacts.* Deadline 5 Status - No Change. Natural England maintain our previous advice that the Applicant include consideration of compensation requirements for guillemot at the Farne Islands SPA.		The Applicants direct Natural England to the response provided to REP5-059: H3 in **Table 2-22** of this document.
REP5-061: H20	Initial Relevant Representation - *The GRCP should be updated following any reassessments undertaken in response to the advice provided in Appendix G. Compensation metrics should be presented in line with both the Applicant's preferred method for calculating impacts and SNCB guidance.* Deadline 5 Status - Issue Progressed. We welcome the Applicant's updated calculations. However there are currently outstanding queries with the razorbill assessment. Please see Appendix H5 for further details.		The Applicants direct Natural England to the response provided to REP5-059: H2 in **Table 2-22** of this document.
REP5-061: H21	Initial Relevant Representation - *Provide further detail on the methods used to calculate compensation requirements for guillemot and razorbill, and on the rationale behind the choice of method.* Deadline 5 Status - Issue Progressed. We welcome the Applicants updated calculations. However there are currently outstanding queries around how the Applicant came to these values. Please see Appendix H5 for further details.		The Applicants direct Natural England to the responses on compensation quantum provided in **Table 2-22** and **Table 2-23** of this document.
REP5-061: H22	Initial Relevant Representation - *Compensation requirements have only been provided for guillemot and razorbill using compensation ratios of 1:1 and 2:1, and only for a limited range of mortality and displacement rates using the Applicant's preferred approach. We cannot advise on an appropriate compensation ratio until further details of the compensation measures are provided, however we note that the predicted requirements already appear substantial and will be challenging to*		The Applicants direct Natural England to the responses on compensation quantum provided in **Table 2-22** and **Table 2-23** of this document.

I.D.	Natural England Response	RAG Status	Applicants' Response
	deliver. Further discussion will be needed on the scale of compensation required once the impact assessments have been updated. Deadline 5 Status - Issue Progressed. Natural England welcome the Applicant including a compensation ratio of 3:1 in [REP4-027] for guillemot and razorbill. However there are errors in the calculations which need to be resolved in order to provide full comments.		
REP5-061: H26	Initial Relevant Representation - *Beginning eradication prior to the first turbine being installed - eradication may take longer than the two years allocated, and the compensation will not be delivering until the required number of chicks are being produced and have reached age of first breeding (i.e. recruited into the breeding population). We do not consider implementation before impact to be analogous to delivering compensation before impact.* Deadline 5 Status - No Change. Natural England maintains our previous advice.		The Applicants acknowledge that if the purpose of the compensation is to replace adults impacted by the Projects with the equivalent number of adult birds then this is not achieved at the point when the measure is implemented. However, this is considered an impractical approach which is likely to require a decade or more to achieve. The Applicants consider that delivery of the compensation should be at the point when the management activity commences with monitoring and adaptive management plans in place to ensure that the overall compensation requirement is achieved. The Applicants have proposed implementation of predator eradication two years in advance of turbine installation, as this is the length of time required to declare an area predator-free (assuming successful eradication). It is up to the Secretary of State to decide whether that is appropriate and whether the application of a ratio to the compensation requirement is necessary to account for uncertainty or overcompensation. Hornsea Project 4 is the first consented OWF to propose predator eradication as compensation for guillemot, and was consented based on the implementation of predator eradication two years prior to impact (Orsted, 2025[76]).
REP5-061: H30	Initial Relevant Representation - *A more detailed GRCIMP should be provided as soon as possible within the Examination process.* Deadline 5 Status - Issue progressed. Natural England welcome the provision of additional detail in the Outline GRCIMP [REP4-027], particularly the inclusion of seabird monitoring. However, we note that the Applicant has yet to identify a suitable site or eradication plan.		The Applicants direct Natural England to the updated **Appendix 2 - Guillemot [and Razorbill] Compensation Plan (Revision 6)** [document reference 6.2.2] submitted at Deadline 6.

[76] Orsted 2025 Hornsea Project Four Guillemot Implementation and Monitoring Plan.

2.14 Royal Society for the Protection of Birds (RSPB)

Table 2-27 – The Applicants' response to RSPB Deadline 5 Document [REP5-066]

I.D.	RSPB Response	Applicants' Response
REP5-066:1	**1. Introduction** 1.1. This Written Submission contains the RSPB's comments on specific issues raised by the Applicant's Deadline 4 submissions. It covers the following: • Follow-up response to Examiners' Question OR.1.9 on the Kittiwake PVA following review of the Applicant's Deadline 4 submissions REP4-016 (RIAA HRA Part 4 of 4: Marine Ornithological Features) and REP4-087 (Applicant's comments on responses to ExQ1); • Brief comment on REP4-097 (Dogger Bank South Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment report); • Comments on the Guillemot and Razorbill Compensation Plan (REP4-025) updates.	No response is required.
REP5-066:2	**2. Further response to Examining Authority question OR.1.9 on Kittiwake PVA** 2.2. Question OR.1.9 asked the RSPB and Natural England the following question: "Are NE and the RSPB satisfied with the PVAs undertaken for kittiwake from the FFC SPA and presented by the Applicants in the RIAA [AS-085]? Can you explain your response?" 2.3. In the RSPB response to this question (REP4-104), the RSPB acknowledged that the Applicant had provided an updated PVA in Annex A of RIAA HRA Part 4 of 4 – Marine Ornithological Features (Revision 3) [AS-085], that to some extent supersedes the version that NE's advice is related to. We noted that the Applicant had stated it was carrying out further review of their results and would report on this review at Deadline 4. We committed to respond fully to this question upon review of the relevant Deadline 4 documents.	No response is required.
REP5-066:3	2.4. We have now reviewed the relevant parts of REP4-016 (RIAA HRA Part 4 of 4: Marine Ornithological Features) and REP4-087 (Applicant's comments on responses to ExQ1). Our comments are set out below. 2.5. The RSPB welcome the revised PVA undertaken for Kittiwake from the FFC SPA and note that the changes to the values of the output metrics (CPGR and CPS) are small and so do not alter our conclusion of in-combination AEoI on this feature of the SPA and agree with the Applicant's conclusion in this respect. 2.6. Within the range of likely mortalities derived using the methods advocated by Natural England and the RSPB, the revised impacts arising through collisions associated with Dogger Bank South East and West in combination with other offshore wind farms are predicted to result in the annual population growth rate of Kittiwake at the Flamborough and Filey Coast SPA declining, with a ratio of impacted to unimpacted population growth rate of between 0.9956 and 0.9962. This means that after a period of 30 years, the population size of the SPA is expected to be between 87.16 and 88.93% of what it would have been in the absence of the development. Therefore, we consider there is an AEOI due to the impact of collision mortality on the Kittiwake population of the Flamborough and Filey Coast SPA.	2.4. No response is required. 2.5. The Applicants welcome the RSPB's agreement on this matter. 2.6. The Applicants would like to stress that because Natural England and the RSPB require that Population Viability Analysis (PVA) are conducted without the inclusion of density dependent regulation, the results of the PVA present the worst possible interpretation of how mortality may affect a population. It is important to note that running PVA in this (density independent) manner means that any additional mortality will reduce the population growth rate of the impacted simulation compared with the unimpacted baseline population, and it follows that the same applies to the population size: the impacted population will always be reduced compared to the baseline. Under these conditions the Applicants consider that a reduction in growth rate of less than 0.5% is in fact a very small magnitude of effect. The Applicants are strongly of the opinion that the counterfactual of population size is an unreliable guide to the likely effect as this is simply a function of the compound effect of a reduced annual growth rate. Basing predictions of future population sizes on this premise is clearly unrealistic when it is well understood that animal populations are subject to intrinsic regulation that moderates both excessive growth and mitigates against losses by respectively decreasing and increasing rates of survival and reproduction as competition for resources increases and decreases. It is for these reasons that the Applicants have reached the

I.D.	RSPB Response	Applicants' Response
		conclusion that the impacts on the Flamborough and Filey Coast SPA kittiwake population, both from the Projects alone and in-combination, will not result in an Adverse Effects on Integrity (AEoI).
REP5-066:4	**Comment on REP4-097: Dogger Bank South Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment report** 2.7. The RSPB welcomes the submission into the examination of REP4-097 (Dogger Bank South Isles of Scilly Guillemot and Razorbill Survey and Habitat Assessment report). This includes the Applicant's estimates of the area of potentially suitable habitat available for a series of islands, and projections of possible additional auk populations (based on different breeding densities) following a predator eradication scheme. The estimates are summarised in Table 16 of the report and range from 24,296 pairs (conservative projection) to 55,880 pairs (healthy projection). 2.8. As part of the Isles of Scilly Seabird Recovery Project, OWIC has funded a seabird habitat assessment survey for summer 2025, including Guillemots and Razorbills. The survey is being carried out by staff from the RSPB and the Isles of Scilly Wildlife Trust on behalf of OWIC and the Seabird Recovery Project. To inform the Recovery Project work, the survey will assess the area of suitable habitat potentially available to different seabird species. This survey is being carried out in June and is scheduled to report in full in autumn 2025, following detailed analysis of the survey findings. Further work would be required after that in respect of possible population projections and falls outside the scope of this survey work. 2.9. Therefore, the RSPB will not be in a position to provide detailed commentary on Dogger Bank South's population projections during the examination. We may be able to provide qualitative feedback by either Deadline 8 (3 July) or Deadline 9 (10 July) in respect of whether there is likely to be broad alignment in respect of the availability of suitable habitat for Guillemot and Razorbill, and will endeavour to do so.	2.7. The Applicants acknowledge this comment. 2.8. The Applicants welcome the RSPB's update regarding these surveys. 2.9. The Applicants would greatly appreciate if this information could be made available.
REP5-066:5	**Comments on the Guillemot and Razorbill Compensation Plan (REP4-025) updates** 2.10. The RSPB has the following brief comments on updates to the Guillemot and Razorbill Compensation Plan. **Compensation requirements** 2.11. The RSPB welcomes the presentation of updated calculations for potential compensation requirements in Table 4-4, based on the Applicant's and Natural England's preferred displacement and mortality rates. 2.12. The RSPB notes that in its summary of the compensation requirements for each auk species (paragraph 81 for Guillemot and paragraph 98 for Razorbill), the Applicant only cites its preferred values. 2.13. These and any related text would need to be updated in the final Compensation Plan should the Secretary of State decide not to adopt the Applicant's preferred values. To date, the Secretary of State has been consistent in adopting Natural England's displacement and mortality rates in recent decisions.	The Applicants confirm that the final version of the **Guillemot [and Razorbill] Compensation Plan (Revision 6)** [document reference: 6.2.2] will include the final compensation requirements as concluded by the Secretary of State.

I.D.	RSPB Response	Applicants' Response

REP5-066:6	**Status of Worms Head and Middle Mouse project-led sites**
	
	2.14. The RSPB has the following comments in respect of the Applicant's updates regarding its survey work for Worms Head and Middle Mouse:
	
	• **Worms Head**:
	  ○ The Applicant states in paragraph 126 the results of their survey indicate that Worms Head could provide sufficient nesting space to meet the compensation requirements of the projects. However, they do not reveal how they have reached that conclusion and on what compensation requirements it is based. Given the wide range in potential compensation requirements set out in Table 4-4 e.g. Guillemot could range from 543 pairs to 11,643 pairs, and Razorbill from 174 pairs to 25,029, it is critical for the basis of this claim to be set out clearly to the examination.
	• **Middle Mouse**
	  ○ The Applicant's update states that no rats were recorded during their survey in February 2025. However, they then go on to state that this might be because the seabirds were absent at the time of the survey (i.e. the potential food resource was absent) and that rat presence on the island is potentially seasonally restricted. However, no evidence is presented to support these statements. Before Middle Mouse can be given serious consideration as a potential compensation location, it is essential that robust evidence is presented demonstrating rat presence during the breeding season and that it is having damaging impact on the breeding Guillemot and/or Razorbill populations.
		The Applicants are no longer progressing with Worms Head as a potential compensation site and therefore no response is required for this comment.
		
		The Applicants acknowledge the RSPB's comment regarding Middle Mouse. As stated in **The Applicants' Responses to Deadline 4 Documents** [REP5-037] the Applicants intend to maintain Middle Mouse as a potential compensation site option. Following consultation with Natural Resource Wales, further surveys cannot, for reasons of seabird disturbance, be undertaken until after the breeding season. Therefore, the Applicants will re-assess the requirement for surveys closer to this time.

2.15 Ullyotts on behalf of J L White and Son

Table 2-28 - The Applicants' comments on Ullyotts on behalf of J L White and Son] responses to ExQ1 [AS-181]

I.D.	Question	Response from Ullyotts on behalf of J L White and Son	Applicants' Response
LUA 1.6	**Sterilised and impractical land** Please identify the locations which you believe would become sterilised or impractical to farm, and have not been included within the Applicants' assessment, as referred to in your Relevant Representations [RR-001], [RR-002] and [RR-054] and Written Representations [REP1-068] and [REP1-069]. Your answer should include: a plan identifying the location; the quantum area of land affected; a Land Plot reference number (or nearby Land Plot reference number) from the submitted Land Plans (revision 2) [PDA-004]; and appropriate justification to explain the aforementioned effects.	For the purpose of answering this question we have not identified areas of agricultural land that will be temporarily unfarmable due to the scheme as this can sensibly be dealt with through compensation. In respect of areas made impractical or sterilised permanently the attached Indicative Landscape Plan ("ILP") shows three areas highlighted orange and marked A, B and C. These areas form part of or adjoin plot 18-010 of the applicants Land Plans and, if the ILP is assumed to be correct the areas left sterilised by the proposed project are the following sizes: A – 0.58Ha (approx. 20m wide) B – 0.48Ha (approx. 25m wide) C – 0.30Ha (approx. 25m wide) All three of these areas currently form part of larger arable fields and will be severed due to the project. The size of modern agricultural machinery leaves these areas completely impractical to farm following completion of the project. I should also like to point out the area D on the attached plan is forms part of plot 18-010 which is included within the book of reference as being required for freehold acquisition. The ILP suggests that the majority of this area will be returned to agriculture but parts of this area could result in being impractical to farm due to final arrangement on the ground.	A response to the verbal submissions from Mr Julian in relation to agricultural land severance can be found at point 16 of the **Applicants' Responses to June 2025 Hearing Action Points** [document reference 16.8].

Appendix A - REP5-058: G5 Supporting Information

1. In reviewing the kittiwake in-combination figures for other wind farms the Applicants made use of the tables presented in the SEP/DEP application. The values presented therein were calculated under previous iterations of guidance on kittiwake avoidance rates and hence the Applicants updated the values to reflect current guidance (as explained in response to REP5-058: G5).

2. In consultation with Natural England, the Applicants were advised by Natural England to also review their kittiwake in-combination collision estimates against Natural England's End of Examination Position provided for the Outer Dowsing Wind Farm application, on the basis that Natural England consider those figures to represent the current total (i.e. to be updated for current guidance). As explained below the Applicants have reviewed several documents in sequence each of which references the next.

3. The first document (the Natural England End of Examination Position for Outer Dowsing) was identified in Natural England's Deadline 5 submission (REP5-058):

   Natural England reiterate our previous advice that that the Applicant should check the in-combination figures for kittiwake at FFC SPA and correct these where necessary, to reflect the most recently published 'figures for other projects. We refer the Applicant to our End of Examination position on Outer Dowsing OWF[77]'

4. In that advice (reproduced above) Natural England make reference to the specific document they recommended the Applicants to refer to - EN010130-002183-Natural England - Appendix F6 Natural England's advice and end of Examination position on Offshore Ornithology[78]. The relevant table within that Natural England document is Table 3 (reproduced below).

[77] EN010130-002183-Natural England - Appendix F6 Natural England's advice and end of Examination position on Offshore Ornithology.pdf

[78] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-002183-Natural%20England%20-%20Appendix%20F6%20Natural%20England%E2%80%99s%20advice%20and%20end%20of%20Examination%20position%20on%20Offshore%20Ornithology.pdf

Table 3: Predicted impacts on the kittiwake FFC SPA population for the range of revised mortality impacts presented in the Applicant's updated RIAA [REP5-101] for ODOW alone and in-combination collision impacts. Counterfactuals of growth rate and counterfactuals for final population size have been presented as by the Applicant within the updated RIAA

Kittiwake: Flamborough and Filey Coast SPA				
Assessment description	Collision mortality 99.2% AR*	% Baseline Mortality using the 2022 census data**	Counterfactual of Growth Rate (CGR) after 35 years	Counterfactual of Final Population Size (CPS) after 35 years
Outer Dowsing alone	15.5	0.119%	1.00	0.993
Consented projects, plus Tier 1d minus 'compensated projects'***	517	3.97%	n/a	n/a
Consented projects, plus Tier 1d incl. 'compensated projects'***	618.9	4.76%	0.992	0.743

5. Within the Table 3 legend Natural England state that the mortality estimates were taken from the Outer Dowsing RIAA submission which was identified as REP5-101 of the Outer Dowsing examination[79]. Within the Outer Dowsing RIAA (REP5-101 of Outer Dowsing Examination), the relevant table is 10-48:

OUTER DOWSING OFFSHORE WIND

Table 10-48: in-combination collision mortalities for kittiwake attributed to the FFC SPA.

Project	Annual Total	Tier	Source
Consented projects (compensation set to zero)	292.0	1a – 1c	Natural England SEP&DEP Position Paper
Consented projects	394.0	1a – 1c	Natural England SEP&DEP Position Paper

6. Within Table 10-48 (reproduced above) the value of 394 kittiwake collisions is presented (the figure Natural England has advised the Applicants they consider is correct) and the source of the figure, given as Natural England's submission to the SEP/DEP Examination.

7. As has been explained by the Applicants in their response to REP5-058: G5, the value of 394 calculated by SEP/DEP was obtained under previous avoidance rate guidance, which the Applicants have revised in their submission. The Applicants therefore conclude that:

[79] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-002018-7.1%20Report%20to%20Inform%20Appropriate%20Assessment.pdf

- The SEP/DEP values were correct but used previous avoidance rates (as applied at that time);
- Outer Dowsing has used the SEP/DEP figures but did not revise them for the updated avoidance rate guidance; and
- Natural England has adopted the Outer Dowsing values as being the current correct total.

8. The Applicants in-combination kittiwake figures have been updated using the SEP/DEP (and by extension Outer Dowsing) figures in accordance with current guidance and therefore represent the current, correct, values.

RWE Renewables UK Dogger Bank
South (West) Limited

RWE Renewables UK Dogger Bank
South (East) Limited

Windmill Business Park
Whitehill Way
Swindon
Wiltshire, SN5 6PB