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**RWE Renewables UK Dogger Bank  
South (West) Limited**

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South (East) Limited**

# **Dogger Bank South Offshore Wind Farms**

**Environmental Statement**

**Volume 7**

**Appendix 9-1 Benthic and Intertidal Ecology Consultation  
Responses**

**June 2024**

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## Contents

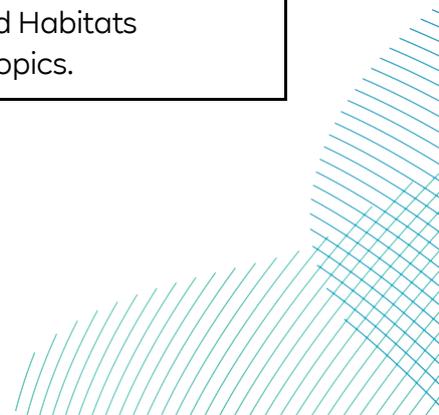
Glossary .....	7
Acronyms .....	10
9.1. Benthic and Intertidal Ecology Consultation Reponses .....	12
9.1.1. Introduction.....	12

## Tables

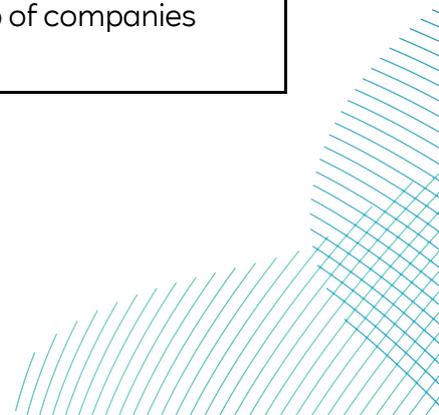
Table 9-1 Consultation Responses Related to Chapter 9 Benthic and Intertidal Ecology....	13
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## Glossary

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.
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 Effects Assessment (CEA)	The assessment of 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.
Dogger Bank South (DBS) Offshore Wind Farms	The collective name for the two Projects, DBS East and DBS West.
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).
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for certain topics.



Term	Definition
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
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.
Horizontal Directional Drill (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossing other obstacles such as roads, railways and watercourses onshore.
Impact	Used to describe a change resulting from an activity via the Projects, i.e. increased suspended sediments / increased noise.
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.
Offshore Export Cable Corridor	This is the area which will contain the offshore export cables (and potentially the ESP) between the Offshore Converter Platforms and Transition Joint Bays at the landfall.
Projects Design (or Rochdale) Envelope	A concept that ensures the EIA is based on assessing the realistic worst-case scenario where flexibility or a range of options is sought as part of the consent application.
Scoping opinion	The report adopted by the Planning Inspectorate on behalf of the Secretary of State.
Scoping report	The report that was produced in order to request a Scoping Opinion from the Secretary of State.
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).

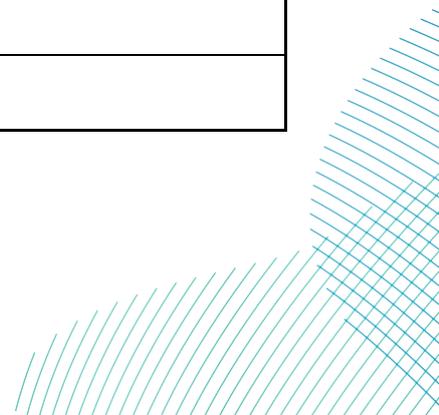


Term	Definition
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).



## Acronyms

Term	Definition
CEA	Cumulative Effects Assessment
DBS	Dogger Bank South
EIA	Environmental Impact Assessment
EMF	Electromagnetic Fields
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
HDD	Horizontal Directional Drill
HRA	Habitats Regulations Assessment
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
INNS	Invasive Non-Native Species
IPMP	In-Principal Monitoring Plan
MCZ	Marine Conservation Zone
MMO	Marine Management Organisation
MW	Megawatt
PEIR	Preliminary Environmental Information Report
PEMP	Project Environmental Management Plan
SAC	Special Area of Conservation
SNCB	Statutory Nature Conservation Body



Term	Definition
SSC	Suspended Sediment Concentration
UK	United Kingdom
UXO	Unexploded Ordnance
WCS	Worse Case Scenario
ZOI	Zone of Influence



## 9.1. Benthic and Intertidal Ecology Consultation Responses

### 9.1.1. Introduction

1. This appendix covers those statutory consultation responses that have been received as a response to the Scoping Report (2022), the Preliminary Environmental Information Report (PEIR) (2023) and the benthic and intertidal ecology Expert Topic Group (ETG) meetings.
2. Response from stakeholders and regard given by the Applicants have been captured in **Table 9-1**.

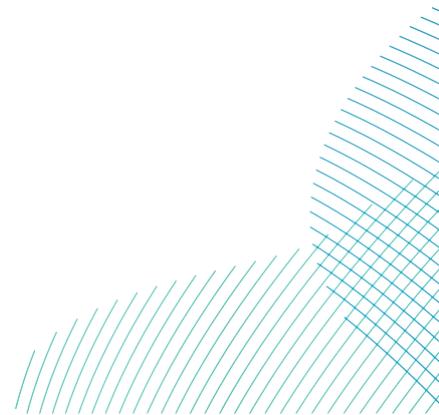


Table 9-1 Consultation Responses Related to Chapter 9 Benthic and Intertidal Ecology

Comment	Project Response
<b>PINS, Scoping Responses 02/09/2022</b>	
<p>Underwater noise from other sources aside from piling and UXO clearance (construction, not considered for other project phases) – This matter (for the construction phase) is not stated in Table 2-15, however the supporting text in Paragraph 233 states that all other underwater noise sources (e.g., vessel traffic) are unlikely to cause significant effects on benthic receptors and are therefore scoped out of the ES. The matter is not addressed at all for the operation or decommissioning phases.</p> <p>No justification or evidence is provided for scoping out underwater noise from sources other than piling and UXO clearance during construction or decommissioning, or underwater noise from any sources during operation. The Inspectorate considers that an assessment should be provided in the ES, supported by a description of how the EPP described in section 1.6 of the Scoping Report has informed the Applicant’s reasoning.</p>	<p>The scope of underwater noise impacts has been expanded to include potential impacts from unexploded ordnance clearance, pile driving for the installation of piled foundation types, cable installation and other construction activities including seabed preparation, rock placement and vessel activity (see section 9.6.2.4 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>Introduction of marine non-native species due to vessel traffic - Based on the information provided on the proposed mitigation and control measures, the Inspectorate agrees that significant effects are unlikely. The ES should detail the proposed mitigation measures, such as the Project Environmental Management Plan, for all project phases. The ES should describe how the mitigation and control measures are to be secured.</p>	<p>Proposed embedded mitigation measures relating to the introduction of marine non-native species due to vessel traffic are detailed in section 9.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>Long term habitat loss during construction and decommissioning - Paragraph 234 notes that impacts which span the life of the projects, like habitat loss, will be considered for the operational phase assessment. The ES should address temporal scope when it addresses the likely significant effects with reference to temporary, long-term, and permanent habitat loss across relevant phases of the Proposed Development. Terms such as ‘temporary’ and ‘long-term’ should be defined in the ES where they are used.</p>	<p>Timeframes for the Projects’ lifespan are provided where relevant in the assessment, with the terms ‘temporary’ and ‘long-term’ defined in section 9.4.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9.0)</b>. The timeframes align with the MarESA definitions for recoverability.</p> <p>In addition, the impact of ‘long term habitat loss’ has been amended to ‘permanent habitat loss’ as scour and cable protection would likely be left <i>in situ</i> unless removal is deemed to be of a greater benefit to the environment at the time of decommissioning (see section 9.6.4 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9.0)</b>).</p>
<p>Pollution events resulting from the accidental release of pollutants (all project phases) - Based on the information provided on the proposed mitigation and control measures, the Inspectorate agrees that significant effects from accidental release of pollution during construction are unlikely.</p> <p>The Scoping Report does not discuss the risks of this impact during operation; however, the Inspectorate considers that a similar rationale applies. The ES should detail the proposed mitigation measures, such as the Project Environmental Management Plan, for all project phases. The ES should describe how the mitigation and control measures are to be secured.</p>	<p>Proposed embedded mitigation measures relating to pollution events are detailed in section 9.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>Remobilisation of contaminated sediments (all phases) - The Scoping Report does not provide a discussion of this matter for the operation or decommissioning phases; however, it is denoted as scoped out in Table 2-15.</p>	<p>Relevant impacts have been included in the assessment for construction and decommissioning (see sections 9.6.2 and 9.6.4 of <b>Volume 7,</b></p>

Comment	Project Response
<p>As noted in Table 3.2 above, the Inspectorate does not consider that sufficient information has been provided to scope out mobilisation of contaminants at this stage and therefore, the resulting effects on benthic ecology cannot be scoped out. The ES should assess this matter or demonstrate that no pathway for significant effects exists, drawing from the marine sediment and water quality assessment as appropriate.</p>	<p><b>Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> respectively).</p> <p>In addition, based upon the conclusion of the assessment during construction, justification for scoping out remobilisation of contaminated sediments during operation is provided in section 9.6.2.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>Increased suspended sediment concentrations during operation - As noted in Table 3.2 above, the Inspectorate does not consider that increases in suspended sediment can be scoped out at this stage and therefore, the resulting effects on benthic ecology cannot be scoped out.</p> <p>The ES should assess this matter or provide evidence to demonstrate that no pathway for significant effects exists, drawing from the marine sediment and water quality assessment as appropriate.</p>	<p>An assessment of the potential effects on benthic ecology receptors from an increase in suspended sediment concentrations is provided in section 9.6.2.2 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> for construction and section 9.6.3.2 for operation.</p>
<p>Interactions of Electromagnetic Fields (EMF) (including potential cumulative EMF effects) during construction and decommissioning - The Inspectorate agrees that this impact-effect pathway should be assessed for the operational phase only where likely significant effects could occur.</p>	<p>Noted (see section 9.6.3.4 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>Interactions of heat generated by (operational) cables - The Inspectorate understands from the information in Paragraph 248 that heat emissions from operational cables are likely to be negligible.</p> <p>The Inspectorate agrees that likely significant effects are unlikely and that this matter can be scoped out of the ES.</p>	<p>Noted.</p>
<p>Colonisation of introduced substrate, including non-native species (operation) - The Inspectorate accepts that this impact is restricted to the operational phase and can be scoped out of construction and decommissioning.</p>	<p>Noted. Colonisation of introduced substrate, including invasive / non-native species, is assessed for operation in section 9.6.3.5 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>Underwater noise and vibration from piling and UXO clearance during operation - No discussion of the need for unexpected/ emergency UXO clearance during operation is provided, and no information on other operational/maintenance activities which would be sources of underwater noise is provided.</p> <p>The Inspectorate advises that the ES should provide an assessment of the likely significant effects of underwater noise during operation or provide justification that significant effects are unlikely supported by the evidence highlighted above.</p>	<p>Any UXO would be identified and then avoided or cleared at the pre-construction phase. Activities during operation will all be localised around existing infrastructure (foundations and cables) which will be located away from UXO or where UXO have been previously cleared during construction. There would be no need to enter areas where UXO could be present, and therefore there is no pathway for effect.</p> <p>Discussion of underwater noise in relation to the operational phase of the Projects is detailed in section 9.6.2 of this chapter as it is of lesser magnitude than that during construction, it is therefore scoped out of the assessment for the operation phase.</p> <p>UXO clearance will be the subject of a separate Marine Licence post-consent. However, if further UXO clearance was needed during operation an additional marine licence would be applied for and an environmental assessment completed at the time.</p>

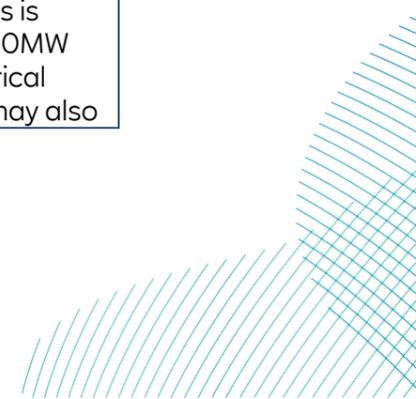
Comment	Project Response
<p>Data collection - As well as the types of investigations undertaken, the ES needs to set out the methodologies used and to what extent these have been agreed with relevant stakeholders, for example via the EPP described in Section 1.7 of the Scoping Report.</p>	<p>Section 9.4.2.1 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> outlines the site-specific surveys undertaken for the Projects, and how the method statements for each survey were agreed with stakeholders.</p> <p>Full methods for the benthic subtidal and intertidal surveys are presented in <b>Volume 7, Appendix 9-2 Intertidal Survey Report (application ref: 7.9.9.2)</b> and <b>Appendix 9-3 Benthic Ecology Monitoring Report (application ref: 7.9.9.3)</b></p>
<p><b>Environment Agency, Scoping Responses 02/09/2022</b></p>	
<p>Surveys - We agree with the potential impacts to marine sediment and water quality and benthic/intertidal ecology which have been identified in the Scoping report and we are happy with proposed approach to assessment for these habitats.</p> <p>We will need to see the results of the intertidal surveys at the landfall location, due to take place in 2022, as referred to in paragraph 224.</p>	<p>Noted. See <b>Volume 7, Appendix 9-2 (application ref: 7.9.9.2)</b> for the results of the intertidal surveys conducted.</p> <p>An assessment of effects on benthic intertidal receptors is provided for the relevant impacts in section 9.6 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p><b>Marine Management Organisation, Scoping Responses 02/09/2022</b></p>	
<p>Section 2.5.4 of the report (referenced in paragraph 5) encouragingly states “The assessment of the potential impacts upon the benthos will be cross referenced where relevant to the assessments for marine physical processes and marine water and sediment quality”. The MMO welcomes this commitment to better predict the physical impact of the installation more accurately and agree that the relevant assessments (and resulting datasets e.g., from acoustic survey of the seabed) should be included during benthic characterisation and monitoring stages of the developments.</p>	<p>Noted.</p>
<p>The MMO agrees with the current proposals around mitigation. Additional mitigations, e.g., micro siting to avoid Annex I habitats and monitoring, will be developed further as the application progresses.</p>	<p>The current embedded mitigation measures proposed for the Projects are detailed in section 9.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>A separate Cumulative Impacts Assessment (CIA) will be considered temporally and spatially overlapping impacts and will be informed using the results of the marine physical processes assessment. The report (referenced in paragraph 5) states that any benthic impacts are anticipated to be localised and temporary. However, until the CIA is reviewed, the MMO cannot comment specifically on potential cumulative impacts to the benthic assemblage as a consequence of the Dogger Bank South OWFs.</p>	<p><b>Volume 7, Chapter 6 EIA Methodology (application ref: 7.6)</b> and <b>Volume 7, Appendix 6-2 (application ref: 7.6.6.2)</b> provides further details of the general framework and approach to the Cumulative Effects Assessment (CEA), with the assessment for benthic and intertidal ecology being presented in section 9.8 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>While the potential impact of temporary increases in suspended sediment concentrations has been scoped in for all stages of the development (construction, operation and maintenance, and decommissioning), the only reference to Annex I <i>Sabellaria spinulosa</i> reef within the report is in reference to the effect of electromagnetic fields on this receptor. Annex I reef within the Dogger Bank South Offshore Wind Farms will be identified through subsequent characterisation surveys (planned for 2022) and no further assessment is required at this stage.</p>	<p>The site-specific surveys conducted for the Projects found the presence of <i>Sabellaria spinulosa</i> individuals in seven stations sampled (see <b>Volume 7, Appendix 9-3 (application ref: 7.9.9.3)</b> and <b>Appendix 9-4 (application ref: 7.9.9.4)</b>). However, no reef formations were found across the Offshore Development Area.</p>

Comment	Project Response
<p>Regarding the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWMC) and the potential impact of harmful aquatic organisms being introduced from increased vessel traffic; the UK acceded to the BWMC on 26 May 2022. The UK domestic regulations (The Merchant Shipping (Control and Management of Ships' Ballast Water and Sediments) Regulations 2022) which implement the BWMC requirements, entered into force on 29 July 2022 and the applicant should include reference to these regulations subsequently.</p>	<p>The new UK regulations have been referenced in <b>Table 9-3</b> (section 9.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p><b>Natural England, Scoping Responses 02/09/2022</b></p>	
<p>Rock protection has now been included with a commitment to minimise its use within the Dogger Bank SAC - Whilst Natural England welcome this, external cable protection should be fully considered in impact assessments including for the full length of the export cable corridor. Within the ES thorough consideration should be given to how the use of external protection will be minimised, in order to provide the ExA and regulators the necessary confidence in the success of any proposed mitigation measures.</p>	<p>The assessment of permanent habitat loss along the offshore export cable corridor (see section 9.6.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>) has considered that external protection measures may be utilised at any point along its length.</p> <p>As detailed in <b>Table 9-3</b> (section 9.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>) the use of scour protection and external cable protection will be minimised through following the recommendation of Cable Burial Risk Assessments commissioned by the project and through following best practice guidance measures.</p>
<p>Approach to data collection - We recommend that benthic survey scopes are discussed with Statutory Nature Conservation Bodies (SNCBs) in advance and advise that as a minimum best practice guidance should be followed. Following recent discussions with developers and stakeholders about the importance of sharing data, existing datasets can and should be used to inform the marine environment whenever practically possible.</p>	<p>Method statements for the benthic characterisation survey (issued on the 14<sup>th</sup> of April 2022) and intertidal survey (issued on the 8<sup>th</sup> of June 2022) were shared and agreed with SNCBs prior to these surveys being undertaken.</p>
<p>Potential impacts - Given the wide scope we would recommend caution as Likely Significant Effect (LSE) cannot be ruled out for any features at this stage. We note that there is no mention of the requirement for rock deposits as a result of scour. We would expect all activities and impacts to be clearly assessed in section 2.5.3. We suggest that benthic habitat disturbance and loss is scoped in as a potential impact of UXO clearance.</p>	<p>The potential impacts of rock placement and UXO clearance are detailed in section 9.6.3.3 and 9.6.2.1 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>Overall comments - We are unable to agree at this stage if all benthic impacts have been identified owing to the very wide study area and unknown grid connection location. We note that there is very little information included on how the assessment to designated sites will be undertaken, what information will be needed to inform these and what impacts should be taken into account. We highlight that impacts on Dogger Bank SAC, how these are assessed and how the steps in the habitats regulations are followed are a key risk for this project. Where it is not possible to rule out an adverse effect on integrity early conversations should be held on potential compensation proposals as per BEIS H3 decision letter and draft NPS policies. Additional discussion will also be needed in relation to export cable route, landfall and potential considerations as scoping has been undertaken without a defined landfall location and grid connection</p>	<p>Noted, details of the effect on designated sites is included in the <b>Report to Inform Appropriate Assessment (RIAA) (application ref: 6.1)</b> and <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b>.</p>
<p><b>PEIR Consultation, Lincolnshire Wildlife Trust 17/07/2023</b></p>	

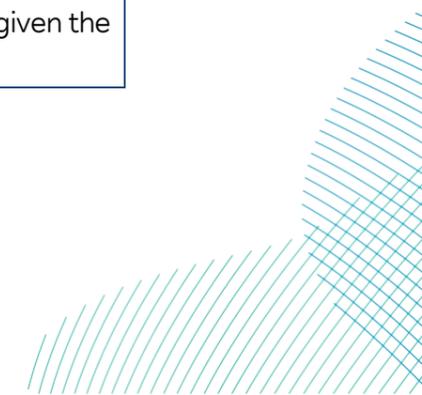
Comment	Project Response
<p>Section 143 of Chapter 9 estimates a worst-case scenario of 100,413,040m<sup>3</sup> from across the development area, with an undecided disposal site. This estimate suggested a very substantial amount of: 1) direct damage to benthic features and species, 2) disposal material, and 3) resuspended sediment and subsequent deposition. To complicate matters, the Applicant has referenced the Dogger Bank C and Sofia projects which 'were granted a disposal licence across the entirety of their respective array areas'. LWT is concerned with the redeposition of sediment across Annex 1 sandbank habitat within the Dogger Bank SAC, as this would greatly impact benthic and pelagic communities that rely on this unique and important ecosystem. The Applicant has highlighted this issue in section 126 of Chapter 10:</p> <p>- 'For demersal and pelagic species, an increase in SSC and sediment settlement will have the greatest effects upon spawning, particularly for maturing eggs and early-stage larval development. Sediment deposition can smother demersal eggs and larvae. Whereas sediments suspended in the water column, are known to adhere to pelagic eggs and increase the egg sinking rates. Both demersal and pelagic eggs and larvae are at increased risk of oxygen starvation in these scenarios, which may impact recruitment of the local population if activity overlaps spawning seasons.</p>	<p>Following refinement of the Projects design envelope, the maximum sandwave material to be dredged / relocated across the Offshore Development Area has been reduced to 67,247,545m<sup>3</sup>.</p> <p>The impact of increased SSC (including deposition) has been assessed in sections 9.6.1.2 (construction) and 9.6.3.2 (operation) of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> and considered to be minor adverse significance. Impacts are expected to be localised and short-term around the point of discharge, with negligible changes in seabed level expected due to deposition.</p> <p>In addition, a search for additional data on sandeel populations within the Dogger Bank has been conducted. Findings within both published and grey literature have been included within the fish and shellfish baseline and were determined appropriate to supplement the approach undertaken to date (see <b>Volume 7, Chapter 10 Fish and Shellfish Ecology (application ref: 7.10)</b>).</p>
<p><b>PEIR Consultation, Marine Management Organisation 17/07/2023</b></p>	
<p>The MMO does not have any concerns regarding the scoping out of the potential impact of invasive non-native species (INNS) associated with the construction and decommissioning phases. The MMO agrees the impact of INNS (and colonisation introduced substrate) will be assessed as part of the operation phase of the development.</p>	<p>Noted. As agreed, the impact of INNS (and colonisation of introduced substrate) is assessed as part of the operation phase of the development within section 9.6.3.5 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>Similarly, impacts to the intertidal zone have been scoped out of the operational phase of the Projects as HDD will be used to install the cable and therefore, its presence will not lead to any operational impacts (providing the cable is sufficiently buried).</p>	<p>Noted.</p>
<p>Due to the distance from the nearest economic exclusive boundary (40 km) and the confinement of changes in seabed morphology to the immediate vicinity of the Projects infrastructure, transboundary effects on benthic receptors have been scoped out of the assessment and the MMO agrees with this conclusion.</p>	<p>Noted.</p>
<p>The MMO agrees with scoping out heat emissions from operational cables.</p>	<p>Noted.</p>
<p>One of the recommendations in <a href="#">Kirchgeorg et al. (2018)</a> was to consider corrosion protection systems during Environmental Impact Assessment (EIA) for offshore wind platforms and to develop monitoring strategies to determine the long-term environmental impact of the introduction of paint flakes into the marine environment around OWFs. The MMO recommends that consideration is given to the impact of paint flakes (as microplastic pollution), originating from maintenance and operation (specifically application, cleaning and scarping off of corrosion resistant paints) of the Projects, on benthic receptors. It would be useful to provide an estimate of the quantity of paint expected to be used during the lifetime of the Projects and the percentage of that which may be expected to result in microplastic pollution, this would inform the in-principle monitoring plan accordingly.</p>	<p>Any paint utilised for the Projects will be approved for use in the marine environment by the relevant bodies.</p> <p>It is unclear how an assessment of paint flakes could be undertaken. These will be shed throughout the life of the Projects and as fine particles, most will enter the water column and be distributed by currents across a wide area. Given that these will be light (see <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.9)</b> for discussion of fine particulates) it is unlikely they would fall out of suspension in proximity to the turbines and build up over time in the array areas. In</p>

Comment	Project Response
	<p>addition, flakes would not be released as a plume (as per SSC increases from construction or maintenance activities) so the assessment would be of individual particles, released episodically.</p> <p>Every painted structure in the sea will be likewise shedding paint, this is not unique to offshore wind foundations, therefore singling this out as a specific effect for a project EIA does not seem proportionate.</p> <p>The Applicants suggested this should be considered through broadscale research rather than EIA. This was agreed with by stakeholders at the Marine Physical Processes and Benthic Ecology ETG held on the 29<sup>th</sup> January 2024, with Cefas stating that any type of chemical should be considered early in the Project Environmental Management Plan. The <b>Outline PEMP (application ref: 8.21)</b> includes paints within section 4.2 Chemical Risk Assessment.</p>
<p>Similarly, Kirchgeorg et al. (2018) mentions the release of metals from sacrificial anodes, which may result in potential impacts to benthic receptors within the DBS arrays (and therefore within the Dogger Bank SAC). The MMO recommends that the potential increase in sediment contamination is considered as part of the monitoring for the Projects, particularly given the number and concentration of OWF projects in the Dogger Bank area.</p>	<p>Ebeling <i>et al.</i>, (2023) investigated the potential metal emissions from galvanic anodes in offshore wind farms into the North Sea sediments. Sediment samples from different German North Sea OWFs were taken between 2016-2022, and analysed for their mass fractions of metals and their isotopic composition of Strontium. Results showed that mass fractions of the legacy pollutants cadmium, lead and zinc were mostly within the known variability of North Sea sediments. At the current stage the analysed gallium (Ga) and indium (In) mass fractions as well as Ga/In ratios do not point towards an accumulation in sediments caused by galvanic anodes used in OWFs. The Applicants have therefore not included monitoring of this in the IPMP.</p> <p>This approach was agreed with stakeholders at the Marine Physical Processes and Benthic Ecology ETG held on the 29<sup>th</sup> January 2024.</p>
<p>Chapter 9 of the PEIR acknowledges that the introduction of hard substrate into an otherwise sedimentary habitat may have detrimental effects on the existing benthic assemblages due to the colonisation of infrastructure, such as foundations, by hard-bottom or intertidal communities not usually present in the Dogger Bank region. However, the PEIR only presents the magnitude of impact and significance of effect for recruitment of invasive non-native species (INNS) on the Projects infrastructure. The MMO recommends that consideration is given to the effect of colonisation of the Projects by hard-bottom and intertidal species within the ES and that their presence is monitored accordingly throughout the lifetime of the Projects. The MMO notes that the Habitats Regulations Screening document referenced in Paragraph 9 specifically includes this pressure as 'Physical change (to another seabed type / to another sediment type)'.</p>	<p>The potential for colonisation of Project infrastructure by non-INNS species is considered in section 9.6.3.5 of this chapter.</p> <p>In addition, the <b>RIAA (application ref: 6.1)</b> has been submitted alongside the ES.</p>
<p><b>PEIR Consultation, Natural England 17/07/2023</b></p>	
<p>Baseline data is incomplete. Site specific modelling for suspended sediments and geophysical surveys have not yet been provided. The Baseline Characterisation Report is also a draft, but it is unclear what, if any, aspects are due to</p>	<p>Physical processes modelling results and a final version of the supporting benthic characterisation report is included in <b>Volume 7, Appendix 8-3</b></p>

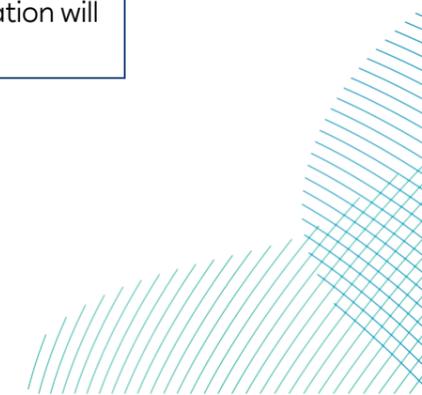
Comment	Project Response
<p>change. Natural England is unable to provide further advice until a complete draft ES chapter and supporting Annexes have been provided.</p>	<p><b>Marine Physical Processes Modelling Technical Report (application ref: 7.8.8.3)</b> and <b>Appendix 9-3 Benthic Ecology Monitoring Report (application ref: 7.9.9.3)</b> respectively, with any significant changes to the report highlighted.</p>
<p>We welcome a proportionate approach being taken to the assessments where appropriate, but note that there will be limitations to the use of the original Creyke Beck and Teesside EIA. The EIAs for Creyke Beck and Teesside were conducted over 10 years ago, and in line with our Best Practice Guidance, for data over 5 years old it must be evidenced that it is appropriate for use. Our understanding of affected designated sites, offshore wind (OWF) impacts, construction technologies and the volume of consented infrastructure in the area has evolved since the original assessment was conducted. For the above reasons, we support data from these EIAs being used to support Dogger Bank South's characterisation where appropriate, but it cannot be used in place of project specific data.</p>	<p>Further explanation on how existing datasets have been utilised in the assessment is included in section 9.4.2 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>. Project-specific data, through the finalised benthic monitoring report (<b>Volume 7, Appendix 9-3 (application ref: 7.9.9.3)</b>) and marine physical processes modelling (see <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b>), is used as the primary source of information when assessing impacts on the existing environment.</p>
<p>Further clarification is required as to what the intended use of existing datasets would be – reference is given in to other available sources of data but follow up on what context these have been used in is lacking.</p>	
<p>There are several inconsistencies across and/or within documents and therefore it is unclear what the worse-case scenario is and if it has been assessed. Natural England advises that inconsistencies are addressed prior to submission in order that worst-case scenarios can be determined.</p>	<p>Noted, these inconsistencies have been addressed to ensure the worst-case scenarios can be determined.</p>
<p>Natural England notes that the approach to the EIA assessment is proposed to align with other OWF NSIPs. This matrix approach has been used throughout ESs to date to support the assessment of the magnitude and significance of impacts. Natural England notes numerous instances where significance has been presented as a range (i.e., slight, or moderate, or large) and it is nearly always the lower value that has been taken forward. In the absence of evidence to support the use of the lower value in a range, Natural England's view is that the higher value should always be assessed in order to ensure that impacts on features haven't been incorrectly screened out of further assessment. This is in line with the principles of the Rochdale envelope approach. Robust justification will need to be provided for any parameters used to determine the magnitude and significance of any impacts.</p>	<p>Noted, all significance statements made in each chapter topic have been reviewed to ensure their accuracy and proportionality.</p>
<p>Natural England notes that the proposed number of platforms is considerably greater than for other recently consented OWFs e.g., Norfolk Boreas, but without clear justification for the additional platforms or how the mitigation hierarchy has been followed to minimise the impacts from the platforms placed within the Dogger Bank SAC. Robust justification will need to be presented to support the Application.</p>	<p>The Projects are integrated in National Grid ESO's proposed Holistic Network Design, which aspires to a co-ordinated grid connection with a 3rd party offshore wind farm (Dogger Bank D, otherwise known as Gatroben) and an offshore HVDC link from Scotland to England. The concept for the HND, issued in July 2022, shows two 1800MW HVDC connections between DBS and Creyke Beck with a 275kV interconnection between the HVDC converter stations, with interconnection to a third 1800MW HVDC connection to Lincolnshire (outside of DBS' scope). Due to the weight and space requirements to enable this interconnection and functionality, and the uncertainty of the final HND concept to be taken forward, DBS cannot currently confirm the number of required platforms. The proposed number of platforms is based on 2x HVAC collector platforms (500MW each) and a 1800MW HVDC converter station per DBS project. Therefore, 6 total electrical platforms within the Array Areas themselves. Further platforms may also</p>



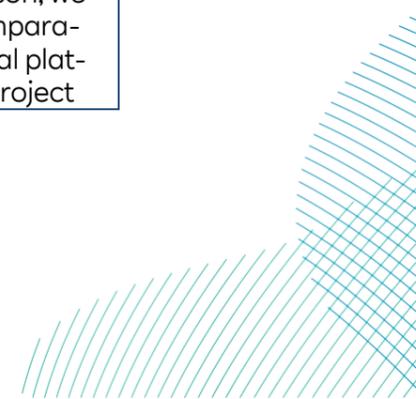
Comment	Project Response
	<p>be required to facilitate the connection to the Scotland 1800MW link (Electrical Switching Platform), and an accommodation platform to support O&amp;M.</p> <p>The DBS design envelope contained up to 11 platforms across two projects, each of up to 1.5GW of capacity each for PEIR. For ES submission this number will be reduced to a maximum of eight platforms across two projects.</p> <p>We note Hornsea Project Four allowed for up to 10 platforms and that each of the Dogger Bank Creyke Beck Projects (now Dogger Bank A and B) allowed for a maximum of seven platforms for each project (up to a total of 14 platforms). With reflection on these figures, and noting that the DBS projects represent two separate projects with a combined capacity greater than those mentioned for the purpose of comparison, we suggest that the maximum number of platforms proposed is comparatively modest. A description of the purpose of each of the potential platforms included in the ES envelope has been included in the final project description (<b>Volume 7, Chapter 5 Project Description (application ref: 7.5)</b>).</p>
<p>We advise that further mitigation measures could be adopted to further minimise the benthic impacts on Dogger Bank SAC features. Consideration to reduce the Rochdale envelope to remove Gravity Base and suction bucket foundations from within Dogger Bank SAC.</p>	<p>Suction bucket foundations for the turbines have been removed from the design envelope for the Projects post -PEIR. To accommodate the potential for larger topside platforms to be used for the offshore platforms, Gravity Based foundations have remained as an option only for any platform located along the Offshore Export Cable Corridor. Neither Gravity Based foundations nor suction bucket foundations will be used within the Dogger Bank SAC.</p>
<p>Natural England advises that full consideration is given to potential benthic mitigation measures which have been adopted for other projects.</p>	<p>Mitigation measures utilised in recent project applications have been reviewed for their potential inclusion for the Projects – see section 9.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> for embedded mitigation commitments.</p>
<p>We note that for all impact and receptor pathways assessed during all project phases, none are considered to have a significance higher than minor adverse, despite the array areas being fully within Annex 1 habitat. Further, the magnitude of impacts of two wind farms being developed are assessed as being no higher than a single wind farm, with most impacts considered negligible. Clarify or provide further explanation of the assessment of magnitude of impact for the two development scenarios.</p>	<p>For the EIA, the designation of the sandbank as Annex 1 does not affect the sensitivity of the receptors, which are based on the MarESA criteria for their ecology. The <b>RIAA (application ref: 6.1)</b> document assesses the SAC features specifically and is submitted alongside this ES.</p> <p>In the context of the Annex 1 sandbank habitat within the Dogger Bank SAC covering an extent of 12,331km<sup>2</sup>, and in the wider sandbank area present within the North Sea, it is considered that the difference in footprint between the Projects in isolation/together is negligible given the extent of existing habitat.</p>



Comment	Project Response
	It is also considered within the CEA (section 9.8.3.3) that the cumulative effects of habitat loss within the SAC are negligible due to the extent of the existing habitat.
<p>Natural England considers that both the Holderness Inshore MCZ assessment and Dogger Bank RIAA are fundamental documents required to support the Application, plus any discussion and issues resolution prior to Application submission on In principle Compensation Measures and Measures of Equivalent Environmental Benefit. Natural England advises that these documents are provided in order to progress project discussions prior to submission.</p>	<p>The <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b> and <b>RIAA (application ref: 6.1)</b> for the Projects has been submitted alongside this ES, with discussions held at ETGs with stakeholders.</p> <p>The <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b> assessment concluded that the effect of the Projects on the Holderness Inshore MCZ and Holderness Offshore MCZ would be non-significant, and Measures of Equivalent Environmental Benefit would not be required for these sites.</p>
<p>These tables indicate that there could be 48-100 turbines within each array across both projects. Natural England understands that the number used is based on the size of the turbine deployed, i.e. 48 large turbines or 100 small turbines. Clarity is needed on whether a mix of large and small turbines could also be installed within each array and what will determine the number of turbines installed, noting that the combination of size and number will impact both benthic and marine process receptors and will dictate the worst-case scenario.</p>	<p>There does exist the potential for a mix of large and small turbines to be installed within each array area. However, it should be noted that regarding the worst-case scenario for benthic and intertidal ecology, a full build-out of small turbines would cover the largest footprint, over that of any potential mix of large and small turbines.</p>
<p>The sandwave levelling temporary construction footprints are given as:            Array area: 2,587,500 m<sup>2</sup>            ECC: 6,141,005 m<sup>2</sup> (with Dogger Bank South (DBS) West having double the amount of DBS East if HVAC is used)            It is unclear what evidence has been used to derive these estimates. Further information is needed on how these estimates have been derived.</p>	<p>Further details on how calculations have been estimated is included within the WCS table (<b>Table 9-1 of Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>The wind turbine layout will not be finalised until much closer to construction with the final layout being based on optimising energy output and ground conditions. We consider that the layout should also factor in reducing environmental impacts to both benthic and marine processes receptors.</p> <p>We advise that more detail on the type of foundation, orientation, and distribution pattern of the turbines relative to mean currents and tidal patterns is required as the cumulative impacts could have adverse effects on benthic communities as a result of changes in sediment transport processes.</p>	<p>Site-specific data collected for the Projects will be used to further refine the layout for the Projects at the detailed design stage post consent. Detail from the project-specific marine physical processes modelling has been used to inform the CEA regarding sediment transport processes (see section 9.4.2.1 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>As with wind turbines, locations of offshore platforms have not been provided. Noting that there could be up to four within each array, we advise that consideration should be given to environmental impacts to benthic and marine process receptors in their location. See Point B13.</p>	<p>Site-specific data collected for the Projects will be used to inform the locations of the potential offshore platforms at the detailed design stage post consent.</p>
<p>It is stated that the Electrical Switching Platform (ESP; if required) will provide a link to a co-ordinated east coast transmission system which is planned to run from Scotland to England, as per National Grid ESO's Holistic Network Design. Further information is needed on whether this would affect any other parameters within the project</p>	<p>The parameters detailed in the worst-case description encompass any additional inputs from the HND. As such its potential implementation will not affect the other parameters.</p>



Comment	Project Response
<p>description, e.g. number of export cables, and when it will be known if this option is being taken forward. And any cumulative impacts HND options may pose, in-combination with the project, or is it a case of HND only?</p>	
<p>Table 5-25 suggests that 9 HDD drills would be required for the build out scenarios of both two HVDC projects and a HVAC and HVDC project. Based on the text in 5.5.1, we consider that 8 would be needed if both projects used HVDC.</p> <p>The total area disturbed for offshore export cables for temporary physical disturbance during construction for DBS East and DBSW together is the same as for DBS West in isolation (15,496,459 m<sup>2</sup>). We believe this should be 24,684,688 m<sup>2</sup>. In the Project Description, four HDD drills are required for DBS East in isolation. In Table 9-2, it is given as five.</p> <p>Natural England advises that inconsistencies are addressed prior to submission in order that worst-case scenarios can be determined.</p>	<p>Project parameters and any identified inconsistencies have been updated in line with the updated design envelope for the Projects. In addition, as below HVAC transmission has been removed from the design envelope since PEIR (see <b>Table 9-1 of Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> and <b>Chapter 5 Project Description (application ref: 7.5)</b>).</p>
<p>It is stated that the transmission infrastructure will be developed as coordinated projects and that, where practicable, infrastructure will be co-located. Clarity is needed on the achievability of co-location if sequential and/or concurrent scenarios are taken forward by the same versus separate developers. It is unclear how the potential for co-location has been factored into the worst-case scenario.</p>	<p>In terms of offshore co-location, the Projects have the same landfalls and a single 1km wide export corridor for the export cable as far as possible up to the array areas. This reduces the development footprint under all scenarios.</p> <p>Works around landfall (HDD ducting) would all be undertaken in one campaign for both Projects for all scenarios meaning only one round of disturbance.</p>
<p>Natural England notes that the inclusion of one of the arrays having a HVAC electrical solution instead of HVDC considerably increases the amount of offshore infrastructure required, with two additional export cables and at least one additional platform needed.</p> <p>Natural England advise that in line with the mitigation hierarchy the Applicant makes every effort to minimise environmental impacts, by committing to delivering both projects with HVDC transmission systems.</p>	<p>HVAC transmission has been removed from the design envelope since PEIR. This is outlined in <b>Volume 7, Chapter 5 Project Description (application ref: 7.5)</b>. Thus, it is not a feature of the design envelope for this consent application. This provides a clear demonstration of the Applicants' commitment to minimising the environmental impacts of the Projects wherever possible.</p>
<p>It is unclear to Natural England why 6 offshore platforms have been included in the project envelope for each project, with a maximum of 11 across the two projects. We highlight that this is far greater than for other recently consented OWF projects.</p> <p>Further justification is needed for the inclusion of 11 platforms, 9 of which could be within the Dogger Bank SAC. Again, we advise that every effort will need to be made to minimise environmental impacts.</p>	<p>The Projects Design Envelope contained up to 11 platforms across two projects, each of up to 1.5GW of capacity each for PEIR. For ES submission this number will be reduced to a maximum of eight platforms across two projects.</p> <p>We note Hornsea Project Four allowed for up to 10 platforms and that each of the Dogger Bank Creyke Beck Projects (now Dogger Bank A and B) allowed for a maximum of seven platforms for each project (up to a total of 14 platforms). With reflection on these figures, and noting that the DBS projects represent two separate projects with a combined capacity greater than those mentioned for the purpose of comparison, we suggest that the maximum number of platforms proposed is comparatively modest. A description of the purpose of each of the potential platforms included in the ES envelope has been included in the final project</p>



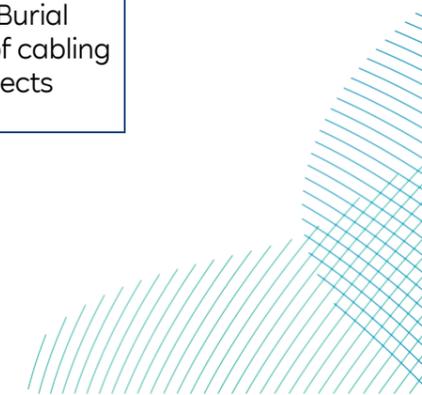
Comment	Project Response
<p>We welcome that gravity base foundations have not been included as an option for the wind turbines but note that they have been included as a platform foundation option.</p> <p>We highlight that no project in UK waters to date has required the use of gravity bases, and that their use would result in a greater area of habitat loss within Dogger Bank SAC than with any other foundation option.</p> <p>We advise that gravity base foundations are removed from the project envelope, or that further information is provided to justify their inclusion.</p>	<p>description (<b>Volume 7, Chapter 5 Project Description (application ref: 7.5)</b>).</p> <p>To accommodate the potential for larger topside platforms to be used for the offshore platforms, gravity based foundations have remained as an option for an offshore platform should one be located along the Offshore Export Cable Corridor. The Applicant has made a commitment that no gravity based foundations will be used within the Dogger Bank SAC. This is outlined in <b>Volume 7, Chapter 5 Project Description (application ref: 7.5)</b>.</p>
<p>A WCS of 2,139,904 m<sup>2</sup> has been estimated as the maximum lifetime footprint for array and inter-platform cable protection for sub-optimally buried cables.</p> <p>Clarification is needed on how these estimates have been derived.</p> <p>We advise that a Cable Burial Risk Assessment (CBRA) utilising site specific geotechnical data is provided at the time of application to determine the realistic level of cable protection that will be required within the Dogger Bank SAC.</p> <p>We highlight that assessments for other recent OWF projects within benthic SAC/MCZs have restricted scour prevention and cable protection allowances to construction, with operational requirements requiring a separate marine licence.</p>	<p>The estimate in the PEIR was based on a WCS of 20% of the array and inter-platform cabling requiring cable protection. It should be noted that this figure has been reduced to 10% for this ES to reduce these allowances.</p> <p>A <b>Cable Statement (application ref: 8.20)</b> which includes Cable Burial Risk Assessments for the export cable and array area cables has been submitted for the Projects alongside this ES.</p>
<p>It is stated that the inter-array cables will be buried typically to a depth of 1m, but burial depth may range from 0.5 to 3m. Given the potential for some of these activities to occur within the Dogger Bank SAC we would like to emphasise that Dogger Bank is formed by underlying glacial sediments, if these are damaged this is a permanent impact and there is not scope for recovery. The surface sediments across Dogger Bank vary in depth (0.5m - 20m), therefore any proposed activities could have varying impacts to the glacial sediments beneath.</p> <p>We advise that cables should be micro sited where possible through areas of deeper surface sandy sediment to maximise the likelihood of achieving target burial depth without the need for cable protection, and to minimise impacts to glacial sediments within Dogger Bank SAC.</p>	<p>The <b>Cable Statement (application ref: 8.20)</b> includes two Cable Burial Risk Assessments for the Projects Offshore Export Cable Corridor and Array Arrays separately. This will aid in determining where shallow areas of glacial till may be located and if required, the use of micro-siting to avoid any such features will be discussed and agreed with the MMO in consultation with Natural England post-consent.</p>
<p>A WCS of 2,708,148 m<sup>2</sup> has been estimated as the maximum lifetime footprint for export cable protection for sub-optimally buried cables.</p> <p>As above. We note that for the impact assessments it will be necessary to know how much of this (if any) could fall within Dogger Bank SAC or Holderness Inshore MCZ.</p> <p>Please also see Point B24.</p>	<p>Potential areas of required export cable protection are detailed in the WCS table (<b>Table 9-1 of Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9.0)</b>).</p> <p>The amount of cable protection within the SAC will be detailed within the <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b> and the <b>RIAA (application ref: 6.2)</b> submitted alongside the ES.</p>
<p>Natural England acknowledges that for the options presented, suction bucket jacket foundations are the correct WCS to be assessed for turbines. However, we note that the impacts associated with this foundation type, particularly in terms of area and volume of scour protection needed, are orders of magnitude larger than for monopiles or pin-pile jacket foundations.</p>	<p>Suction bucket jackets for turbines have been removed from the design envelope post-PEIR.</p> <p>The scope of the decommissioning works would most likely involve removal of the accessible installed components. This is outlined in <b>Volume 7, Chapter 5 Project Description (application ref: 7.9)</b> and the detail would be agreed with the relevant authorities at the time of</p>

Comment	Project Response
<p>Following the mitigation hierarchy, and considering that the project will need to compensate for the scale of its impacts on the Dogger Bank SAC (which currently exceed those predicted in the Plan Level HRA), we advise that suction bucket jacket foundations are removed from the project envelope for turbines.</p> <p>We also highlight that previous projects in the Dogger Bank Zone have been conditioned to remove all on or above seabed infrastructure including scour protection at decommissioning. We would advise that a similar condition is applied to this project and consider that foundations requiring less scour protection which can be more readily removed without further impacts to SAC features would therefore be beneficial.</p>	<p>decommissioning. Offshore, this is likely to include removal of all of the wind turbine components and part of the foundations (those above seabed level), removal of some or all of the array and export cables. Scour and cable protection would likely be left in situ.</p>
<p>Natural England acknowledge that cables being laid and/or buried in separate trenches has been used as the WCS. However, we would encourage consideration of a commitment to bundle cables, particularly within designated sites, to reduce both the impacts of cable laying and volume of cable protection needed. We strongly advise the Applicant to commit to bundling the cables as this could reduce the Project's impacts by half, or two thirds if delivering HVDC only was also committed to.</p>	<p>As a worst-case, this ES assesses for no cable bundling to occur.</p> <p>In addition, HVAC transmission has been removed from the design envelope since PEIR.</p>
<p>We note that sandwave levelling has been included within the Rochdale envelope, which was not the case for the Dogger Bank Crekye Beck and Teesside Applications. Natural England would welcome further evidence to demonstrate a) the necessity for levelling within a stable environment and b) the benefits of sandwave levelling would outweigh the costs if it not undertaken.</p> <p>As with Norfolk Boreas and Vanguard, we would expect a sandwave levelling plan to be included with the Application to determine the quantity of levelling required within the SAC, and demonstrate that levelling and re-depositing of sediment can be undertaken whilst maintaining the structure and function of the sandbank/ site conservation objectives, including not significantly impacting areas of supporting habitat for foraging Annex I birds.</p>	<p>A <b>Cable Statement (application ref: 8.20)</b> including an Outline Cable Burial and Specification, Installation and Monitoring Plan, Cable Burial Risk Assessment and Cable Protection Plan, and consideration of cabling in DB SAC Cable Protection Plan, has been submitted for the Projects alongside the ES and details where (if any) sandwave levelling is required for the Projects. Assessment of any potential effects resulting from sandwave levelling has been carried out in the appropriate ES chapters.</p>
<p>Types of external cable protection should be thoroughly explored for which have the greatest likelihood of being successfully decommissioned.</p> <p>We draw your attention to the Norfolk Vanguard and Boreas pre-determination assessment of possible cable protection removal (EN010079-004217-ExA; Mit; 11.D10.2; App3 Additional Mitigation Appendix 3 Cable Protection Decommissioning.pdf (planninginspectorate.gov.uk)) and Natural England's paper on cable protection decommissioning (Scour and Cable Protection Decommissioning Study - NECR403 (naturalengland.org.uk))</p>	<p>Noted, while the worst-case for potential external cable protection has been assessed within the ES, it has not yet been decided which type of external cable protection will be utilised for the Projects.</p>
<p>The footprint of potential cable reburial and cable protection replacement during the operational phase has been provided with respect to a large or small turbine scenario, rather than the potential build out scenarios.</p> <p>Please provide the WCS for operational cable reburial, cable repair and replacement in line with the respective build out scenarios, noting the clarification requested in Point B11 on whether a mix of large and small turbines could be installed within each array, making the large versus small turbine scenario presented here inappropriate.</p>	<p>The potential cable reburial and cable protection replacement provided is the worst-case scenario for these elements, with a Project build-out of solely small turbines being the realistic worst-case when compared to a mix of large and small turbines. The estimated worst case scenario is presented in the Operation section of <b>Table 9-1 Realistic Worst Case Design Parameters</b> of this chapter (see <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>Landfall works, including HDD exit pits and cofferdams, could occur in either the intertidal or subtidal zone.</p> <p>It is important that the worst-case scenario for landfall works is assessed with respect to benthic receptors in both the intertidal and subtidal, particularly where works are occurring within the Holderness Inshore MCZ. Consideration</p>	<p>Further details on landfall are included in the WCS table (<b>Table 9-1 of Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>) and the impacts within the intertidal area are discussed in sections 9.6.2.1.2 and 9.6.2.2.2.</p>

Comment	Project Response
<p>needs to be given to the presence and duration of ancillary infrastructure and access requirements for the landfall works.</p>	<p>It should be noted that as a result of updates to the offshore export cable corridor and removal of a landfall option, the Projects no longer route through the Holderness Inshore MCZ.</p> <p>Please note that HDD is just one type of trenchless cable installation technique that may be utilised at landfall.</p>
<p>We note that Appendix 9-2 which informs the existing environment characterisation is a draft report, however it is unclear which aspects of the report are 'draft' and may be subject to change. Site specific modelling for suspended sediments and geophysical surveys have also not yet been provided.</p> <p>Natural England is unable to provide further advice until a complete draft ES chapter and supporting Annexes have been provided.</p>	<p>Physical processes modelling results and the final version of the supporting benthic characterisation report is included in <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b> and <b>Appendix 9-3 Benthic Ecology Monitoring Report (application ref: 7.9.9.3)</b> respectively, with any significant changes to the report highlighted.</p>
<p>It is stated that the results of the seabed composition survey are in line with the results of other surveys undertaken within the Dogger Bank SAC and wider area. This is a generic statement with no explanation or background provided as to what such in line results would mean.</p> <p>Further clarification is required as to what the intended use of existing datasets would be – reference is given in Table 9-6 to other available sources of data but follow up on what context these were used in is lacking.</p>	<p>Further detail of the intended use of the datasets is included in section 9.4.2 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>We note that results of the geophysical surveys have not yet been provided. These will be needed to complete the baseline characterisation and assessment of impacts.</p> <p>We advise the results of the geophysical surveys are provided to the ETG as soon as possible, with an explanation as to how this data has been/will be used to inform grab sample and/or drop-down video ground truthing surveys to inform site characterisation.</p>	<p>Results of the geophysical surveys and how they have informed the site characterisation have been shared via email (20/02/2024) and subsequent to the ETG meeting in January 2024.</p>
<p>Acknowledging that geophysical survey results have not yet been provided, it is unclear if sufficient data has been collected to characterise the baseline environment within Holderness Inshore MCZ and/or inform mitigation requirements of the landfall works. From the benthic characterisation report, it appears that only one grab sample has been taken within Holderness Inshore MCZ. We advise the results of the geophysical surveys are provided to the ETG as soon as possible, with an explanation as to how this data has been/will be used to inform grab sample and/or drop-down video ground truthing surveys to inform site characterisation.</p>	<p>Results of the geophysical surveys and how they have informed the site characterisation has been shared via email (20/02/2024) and subsequent to the ETG meeting in January 2024.</p> <p>It should be noted that as a result of updates to the offshore export cable corridor and removal of a landfall option, the Projects no longer route through the Holderness Inshore MCZ. While indirect impacts from sediment dispersion have been assessed within the <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b>, there is no longer the potential for direct impacts to occur to the site as a result of the Projects.</p>
<p>The British Geological Survey have recently released MBES survey data for the Yorkshire coastline out to 10km, which may be of use in the characterisation of the nearshore environment:  <a href="https://nora.nerc.ac.uk/id/eprint/534206/">https://nora.nerc.ac.uk/id/eprint/534206/</a></p>	<p>Noted. The BGS data has been used to inform the nearshore environment within <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b> and within the technical appendices for <b>Volume 7, Chapter 17 Offshore Archaeology and Cultural Heritage (application ref: 7.17)</b>.</p>

Comment	Project Response
<p>A survey of Holderness Inshore MCZ was also completed by Natural England and the Environment Agency in 2018 (Alexander, C., Meaton, N. and Pryor, K. 2019. Holderness Inshore MCZ 2018 Survey Report. Natural England Commissioned Reports, Number 303.). It is unclear if this has currently been used to inform the nearshore baseline.</p>	<p>As the cable burial corridor no longer crosses the Holderness Inshore MCZ, the Holderness Inshore MCZ 2018 Survey Report has not been used to inform the nearshore baseline. In addition, there is no analysis of samples within the report which could have been used for comparison with the offshore export cable corridor.</p>
<p>Until further data and analysis is presented within the ES Chapter and supporting Appendices Natural England is unable to advise further on the acceptability of the Analysis, Modelling and Reporting. Natural England is unable to provide further advice until a complete draft ES chapter and supporting Annexes have been provided.</p>	<p>Noted. Physical processes modelling results and final version of the supporting benthic characterisation report is included in <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b> and <b>Appendix 9.3, Benthic Ecology Monitoring Report (application ref: 7.9.9.3)</b> respectively, with any significant changes to the report highlighted.</p>
<p>Temporary installation of cofferdams have been proposed in the intertidal zone in the Marine Processes chapter, but have not been included in the Benthic chapter.</p> <p>We advise that the WCS for cofferdam usage is also assessed with respect to benthic impacts.</p>	<p>The Projects have removed cofferdams from the Design Envelope. Potential use of exit pits within the intertidal have been included in the worst-case scenario at ES and assessed within sections 9.6.2.1.2 and 9.6.2.2.2 for temporary physical disturbance and suspended sediment concentrations, respectively.</p>
<p>It has been estimated that up to 5% of turbines may require drilling, with drill arisings disposed of adjacent to the foundations.</p> <p>We advise that drill arisings should be included in the construction footprint area for impact assessment. We highlight that if glacial and/or clay deposits are brought up in the drill arisings, they may not dissipate and would require depositing within similar sediment type.</p>	<p>Potential drill arisings have been considered as part of the worst-case footprint for assessment (see <b>Table 9-1 of Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>Matrix approach - Natural England notes that the approach to the EIA assessment is proposed to align with other OWF NSIPs. This matrix approach has been used throughout ESs to date to support the assessment of the magnitude and significance of impacts. Natural England notes numerous instances where significance has been presented as a range (i.e., slight, or moderate, or large) and it is nearly always the lower value that has been taken forward. In the absence of evidence to support the use of the lower value in a range, Natural England's view is that the higher value should always be assessed in order to ensure that impacts on features haven't been incorrectly screened out of further assessment. This is in line with the principles of the Rochdale envelope approach.</p>	<p>Noted, all significance statements made in each chapter topic have been reviewed to ensure their accuracy and proportionality.</p>
<p>It is stated that the Applicant will seek to minimise the use of scour protection and external cable protection for any stretches of unburied cables and cable crossings which will be secured through a Scour Protection and Cable Protection Plan that will be submitted for approval post consent. This has been considered embedded mitigation for the projects.</p> <p>Natural England advises the provision of a plan is not embedded mitigation and the commitments within the plans will be key. Until outline plans have been provided, we are unable to advise if impacts have been adequately addressed and/or mitigated.</p> <p>In line with examination submissions for Norfolk Vanguard and Boreas, we advise that outline plans including any mitigation measures should be provided at the time of Application. Please see previous comments.</p>	<p>Further details on the approach of the Projects to scour protection and external cable protection are included within the <b>Cable Statement (application ref: 8.20)</b> including an Outline Cable Burial and Specification, Installation and Monitoring Plan, Cable Burial Risk Assessment and Cable Protection Plan, and consideration of cabling in DB SAC Cable Protection Plan has been submitted for the Projects alongside this ES. This document is also included as embedded mitigation within <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b> (see <b>Table 9-3</b>).</p>

Comment	Project Response
<p>The study area for benthic ecology uses a Zone of Influence (ZOI) for suspended sediments of 10km for the array area and 15km for the ECC. Whilst the 15km for the ECC is based on a tidal ellipse, and therefore inline with Natural England’s Best Practice Guidance (BPG; Parker et al., 2022), the 10km ZOI for the array area is based on the EIA conducted for the Dogger Bank C and Sofia offshore wind farms (formerly Teesside A&amp;B).</p> <p>NE Best Practice Guidance advises that as a general benchmark, care should be taken when considering datasets which are older than 5 years. Further, as these windfarms are not yet operational the conclusions of their EIA have not yet been validated, and it has not been evidenced that the locations are comparable for the same data to be used.</p> <p>NE advise that a tidal ellipse is used to estimate the zone of greatest influence for sediment plumes for the array area and export cable corridor. We understand that the Applicant intends to provide new, site-specific modelling which may address this point. We request that the new modelling is provided for review during the Evidence Plan Process.</p>	<p>Noted, this ZOI has been updated to 14km for both the Offshore Export Cable Corridor and the Array Areas based on the maximum tidal ellipse excursion and following the review of project-specific data and physical process modelling in <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8.0)</b>.</p>
<p>We note that for all impact and receptor pathways assessed during all project phases, none are considered to have a significance higher than minor adverse despite the array areas being fully within Annex 1 habitat. The magnitude of impacts of two wind farms being developed are also assessed as being no higher than a single wind farm, with most impacts considered negligible. Further, all impacts have been assessed against individual EUNIS biotopes as receptors in terms of magnitude and sensitivity, with Annex 1 sandbank as a whole only considered with respect to percentage losses which are characterised in terms of North Sea extent.</p> <p>We consider that the current approach does not take into account the fact that Dogger Bank SAC is in unfavourable condition, and as only surface biotopes have been assessed, it does not factor in non-recoverable impacts to the underlying glacial sediments. Furthermore, we highlight that the SAC designation is representative protection of the wider feature, it should not be assumed that areas outside of the site do not meet the criteria for Annex 1 sandbank.</p> <p>Clarify or provide further explanation of the assessment of magnitude of impact for the two development scenarios. Whilst we acknowledge that some impacts may be minor/negligible for a project alone, further consideration needs to be given to cumulative effects, including both DBS East and West together.</p> <p>We also acknowledge that this is an EIA assessment, however as the entire arrays sit on Annex 1 feature within an SAC, full consideration needs to be given to the Habitats Regulations requirements. It is important that consideration is given to assessing impacts against the Conservation Objectives of the site/feature and maintaining the coherence of the network</p>	<p>An assessment of the potential effects on the qualifying features of the Dogger Bank SAC is provided in the <b>RIAA (application ref: 6.1)</b> submitted alongside this ES.</p>
<p>It is unclear if the figures for temporary disturbance referenced here for DBS East and West in isolation are correct. Based on the values in Table 9-2 we consider the correct values for the array areas would be 8.8 km<sup>2</sup> for DBS East and 9.7km<sup>2</sup> for DBS West.</p> <p>Please clarify how the estimates in 9.6.1.2.2 have been derived and/or amend as needed.</p>	<p>This was a typographic error. The figures for temporary disturbance in this instance should have been listed as 10.8km<sup>2</sup> and 11.1km<sup>2</sup> in section 9.6.2.1.1.2 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>, which has now been updated.</p>
<p>Dredged material from sandwave levelling will be disposed of at a site yet to be determined, but could be over the entire array area.</p> <p>As with Norfolk Boreas and Vanguard we would expect a sandwave levelling plan to be included with the Application to determine the quantity of levelling required within the SAC, and demonstrate that levelling and re-depositing of</p>	<p>A <b>Cable Statement (application ref: 8.20)</b> including an Outline Cable Burial and Specification, Installation and Monitoring Plan, Cable Burial Risk Assessment and Cable Protection Plan, and consideration of cabling in DB SAC Cable Protection Plan has been submitted for the Projects alongside the ES and a <b>Disposal Site Characterisation Report</b></p>

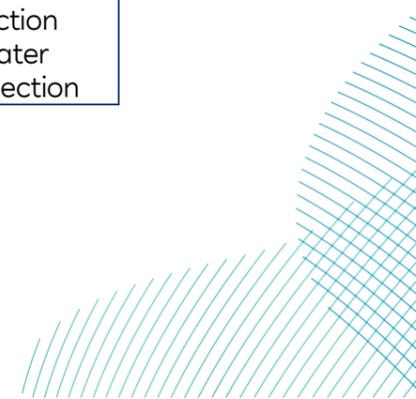


Comment	Project Response
<p>sediment can be undertaken whilst maintaining the structure and function of the sandbank/ site conservation objectives, including not significantly impacting areas of supporting habitat for foraging Annex I birds.</p>	<p><b>(application ref: 8.18).</b> These documents details where (if any) sandwave levelling is required for the Projects. Assessment of any potential effects resulting from sandwave levelling has been carried out in the appropriate ES chapters.</p> <p>Impacts within the SAC are detailed within the <b>RIAA (application ref: 6.1)</b> and <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b> submitted alongside this ES.</p>
<p>Natural England highlights that the worst case crater depth from UXO clearance that has been evidenced in the marine environment is 4m (Ordtek, 2021). Further, the underlying sediments within the Dogger Bank SAC are formed of glacial till and are therefore not dynamic. Any UXO clearance activities that breached the glacial sediments would be considered a permanent impact to the site.</p> <p>We advise that evidence from recent UXO clearance campaigns is utilised where appropriate to inform assessments, and refer the Applicant to our advice to MMO on recent UXO Marine License Applications within Dogger Bank SAC.</p>	<p>It is noted that the breaching of glacial sediments within the SAC would be considered permanent damage. The Ordtek (2021) report evidences a 4m crater depth for a UXO from another offshore wind farm in sandy gravel, however any underlying sediments are unknown. It is stated in the report that <i>“It is immediately evident looking at the sample detonations in similar conditions that there is apparently very little consistency in the sizes of craters that are produced, even for the same type of bomb”</i>.</p> <p>Recent UXO clearance activities for the nearby Dogger Bank B offshore windfarm resulted in maximum crater depths of 0.8m and a maximum crater diameter of 5.3m (see Project Close Out Report Dogger Bank UXO ID and Disposal 2022 report (case ref: MLA/2021/00552)).</p> <p>Given that the top of the chalk in the Offshore Development Area is at least 1m below the seabed overlain by glacial till, a maximum crater depth of 0.8m would not be a permanent impact because till would still be present at seabed. In addition, given that the maximum crater diameter is 5.3m, the size of the crater footprint on the seabed is insignificant compared to the area of naturally exposed seabed till in Offshore Development Area. Separate Marine Licenses will be acquired for UXO clearances post-consent</p>
<p>Significance of effect in the intertidal zone/nearshore. Whilst the location of HDD works will remain the same whether the projects are constructed sequentially or concurrently, the duration of impact will differ (e.g. for cofferdam usage, beach access needs). Further, it is unclear if the intertidal/nearshore has been considered for all impact pathways.</p> <p>We advise that both build out scenarios are included in the assessment. Please provide clarification on how impacts in the nearshore have been assessed.</p>	<p>Impacts on the intertidal/nearshore benthic environment have been considered in the context of the potential for transition exit pit to be located in the intertidal area. Following updates to the intertidal works plan made post-PEIR, the potential impacts resulting from exit pit usage upon benthic species/habitats has been assessed within this chapter (section 9.6.2.1.2 and 9.6.2.2.2 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p>
<p>Natural England cannot comment on the assessment for suspended sediments as the baseline is currently incomplete.</p> <p>We advise that site specific modelling for suspended sediments is shared with the ETG as soon as possible.</p>	<p>Project-specific modelling for the Projects has been completed and shared (via email 21/03/24 along with the final marine physical environment and benthic and intertidal ecology ETG minutes) with stakeholders prior to submission.</p>

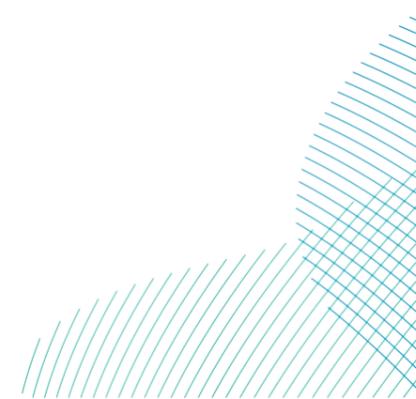
Comment	Project Response
<p>We acknowledge that a Cumulative Effects Assessment (CEA) has not yet been provided. We provisionally agree with the projects screened in for assessment, noting that it is due to be revised and updated as needed prior to submission. Natural England advises that these documents are provided in order to progress project discussions prior to submission.</p>	<p>Noted, the list of projects assessed in the CEA was presented at the ETG in January 2024. There were no comments on the list.</p>
<p>We note that the target burial depth of cables (0.5m-1m) is shallower than required to not have to assess the operational impact of the electromagnetic field (EMF) for cables as given in the National Policy Statement (EN-3) (1.5m depth required). Further, we highlight that Teesside A &amp; B concluded a low magnitude of impact from EMF. This highlights the importance of the CEA due to the scale of activity in the Dogger Bank location.</p> <p>We advise that impacts from EMF are screened into the CEA.</p>	<p>Teesside A &amp; B assessed the impact from EMF as having a negligible impact on benthic communities when assessed in isolation or together.</p> <p>The Projects have also assessed them negligible either in isolation or together (section 9.6.3.4 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p> <p>The biotopes identified over the entire Offshore Development Area have a MarESA sensitivity of 'Not Relevant' in relation to the impact of EMF. 'Not Relevant' is recorded where the evidence suggests that there is no direct interaction between the pressure and biotope or characteristic species within.</p> <p>The presence of increased EMF will last over the entirety of the operational phase of the Projects, however indiscernible alteration to baseline EMF levels is predicted. This is due to the cables being planned to be buried in the seabed (where conditions allow) to a depth of 0.5-1m, a depth at which Love <i>et al.</i> (2017) found that EMF levels for submarine power cables declined to background levels 1m from the cable.</p>
<p>Natural England disagree with the introduction or spread of INNS being screened out for the construction and decommissioning phases, as this is when vessel traffic and material introduction will be at its highest.</p> <p>We advise that INNS are screened in for all phases of the project.</p>	<p>As noted in the response from the MMO, they do not have any concerns regarding the scoping out of the potential impact INNS associated with the construction and decommissioning phases.</p> <p>During construction and decommissioning, embedded mitigation to reduce the spread of INNS is detailed in <b>Table 9-3 of Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p> <p>The WCS for INNS is during the operational phase where the greatest amount of infrastructure will be available to be colonised. Therefore, the impact is assessed during operation in section 9.6.3.5 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p>
<p>A ZOI of 10km has been used for sediment plumes based on evidence from the Teesside A&amp;B EIA.</p> <p>See Point X (9.3.1).</p>	<p>Noted, this ZOI has been updated to 14km for both the Offshore Export Cable Corridor and the Array Areas based on the maximum tidal ellipse excursion and following the review of project-specific data and physical processes modelling (see <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b>).</p>
<p>Natural England acknowledges the use of site proxies where site specific conservation advice is not available for Holderness Inshore MCZ. However, it may not be appropriate to use proxies for high and moderate energy</p>	<p>A <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b> has been submitted alongside this ES. Noted on the limitations of</p>

Comment	Project Response
<p>circular littoral rock. Where possible, we advise that areas of high energy circular littoral rock and moderate energy circular littoral rock should be avoided or would require micro-siting around. The cliffs in this region are made of glacial till and areas of associated clay outcrops of varying height in the subtidal are common, and elevated examples are known as clay huts. We advise that exposed areas of clay are considered to be a component of the circular littoral rock feature and should be treated as such; it is a finite resource and will not recover from cable installation activities. We therefore recommend that clay is avoided where possible, and that rocky reef profile over the cable is reinstated at the time of construction where rock cannot be avoided. Whilst there will likely be a short to medium term impact on the epibenthos and infauna from installation, recovery is more likely if using the same substrate.</p> <p>As per Sheringham and Dudgeon Extension Projects, a Stage 1 MCZ assessment will be required as part of the Applicant's submission.</p>	<p>using proxies for high energy circular littoral rock and moderate energy circular littoral rock in regards their use as proxies for the existing glacial till and clay outcrops, this has been factored into the assessment.</p>
<p>Natural England disagrees with the geological feature Spurn Point being screened out of further assessment. Longshore sediment transport through Holderness Inshore MCZ provides an essential source of sediment to Spurn and the Humber Estuary. It will need to be demonstrated that the projects both alone and in combination with other plans and projects will not impact sediment transport to Spurn and the Humber.</p> <p>We advise that Spurn Point is screened in for further assessment, and that Natural England's comments on Hornsea Project Four on the PINs website are considered by the Applicant (e.g. REP7-103, REP5-114).</p>	<p>As a result of updates to the Offshore Export Cable Corridor and removal of a landfall option, the burial corridor of Projects no longer route through the Holderness Inshore MCZ, therefore there is no direct impacts on the longshore sediment transport through Holderness Inshore MCZ. The impacts on coastal process are negligible to low as they are localised and temporary, and there is no long term change in sediment transport (<b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b>).</p> <p>Due to this negligible to low impact and Spurn Point being 45km away from the Projects, it will not be screened in for further assessment with the <b>Stage 1 Marine Conservation Zone Assessment (application ref: 8.17)</b>.</p>
<p>The baseline data for benthic ecology is incomplete. Geophysical survey results and site specific modelling for suspended sediments and have not yet been provided. There is limited indication of how available geophysical data was used to inform the positioning of benthic sample stations, or any indication of the bedforms encountered and how they may have related to the ecology, or have been used to create the habitat maps. Natural England advises that details of geophysical surveys, and correlation of the geophysical data is included with benthic ecology data to provide confidence in the mapped outputs.</p> <p>Natural England is concerned that existing pressures on the interest features of Dogger Bank SAC are already hindering the conservation objectives for the site. The installation, protection, maintenance and decommissioning of the Dogger Bank South East and West OWFs within this SAC will take the site further away from meeting those conservation objectives. The mitigation hierarchy should therefore be fully explored to reduce environmental impacts. Every effort should be made to mitigate the Project's impacts due to the Dogger Bank South Project's alone, but also to reduce their in-combination contribution to existing pressures or cumulative impacts.</p> <p>Natural England advise that the percentage footprint of Dogger Bank South's infrastructure in the Dogger Bank SAC cannot be viewed in isolation. When added to the increasing number of anthropogenic pressures already operating and proposed across a considerable proportion of the SAC (for example Dogger Bank A, B, C, D and Sofia OWF, marine aggregates, oil and gas etc), the overall spatial extent of the area impacted or predicted to be</p>	<p>Site-specific data and physical processes modelling has been included in this ES assessment (see <b>Volume 7, Benthic Ecology Monitoring Report (application ref: 7.9)</b> and <b>Volume 7, Chapter 8 Marine Physical Environment (application ref: 7.8)</b> respectively). The Projects' design envelope has been updated to reduce its footprint within the Dogger Bank SAC from that assessed at PEIR i.e. through reduction in the worst-case scenario for cable protection and the removal of suction bucket foundations for wind turbines.</p> <p>The cumulative effects assessment for the Projects (section 9.8 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>) considers the footprints of neighbouring projects (where data is publicly available) in conjunction with those of the Projects.</p> <p>An assessment of the potential effects on the qualifying features of the Dogger Bank SAC is provided in <b>Volume 6, RIAA (application ref: 6.1)</b> submitted alongside this ES.</p>

Comment	Project Response
<p>impacted is significant. Furthermore, when all these pressures are summed, an AEol cannot be ruled out, as concluded in the Plan Level HRA. In that context, we draw Dogger Bank South's attention to the recent Secretary of State (SoS) decision on Hornsea Project 3, where it was concluded that cable protection within 0.0026% of the Wash and North Norfolk Coast meant that an AEol could not be ruled out. This was due to the 2.77ha of lasting habitat change/loss. We advise, therefore, that lasting habitat change/loss and other interacting impacts from all relevant existing and proposed projects should be fully considered in the cumulative effects assessment.</p>	
<p><b>Marine Physical Environment and Benthic &amp; Intertidal Ecology ETG - 29/01/2024</b></p>	
<p>The following topics were discussed at the ETG in reference to benthic and intertidal ecology.</p> <ul style="list-style-type: none"> <li>• Benthic Ecology Monitoring Survey Summary</li> <li>• Impact results from the ES</li> <li>• Results from the CEA</li> <li>• Report to Inform Appropriate Assessment (RIAA) conclusions</li> </ul> <p>Regarding contaminants, Cefas agreed that the contaminant levels within the samples analysed were negligible and that the levels are as expected in the North Sea. The THC data was less relevant, especially when the use of PAH data is being done.</p> <p>The MMO, stated that the predicted habitat loss in the PEIR in the Dogger Bank SAC for DBS East and West was 11.4km<sup>2</sup> and has now reduced to 2.2km<sup>2</sup>. What has been done to the project scope for this to be reduced, perhaps reduction in loss from scour and cable protection?</p> <p>Regarding the draft RIAA conclusions, the MMO questioned whether the impact pathways for the DB SAC habitat was specific, and whether the Projects had come to a decision of whether it will be committing to cable and rock protection end of life. Would this be considered a permanent lost in terms of habitat in the assessment?</p>	<p>It was also clarified that the SQGs mentioned verbally, were the Canadian SQGs. The laboratory used analysis of the contaminant samples was also confirmed to be Socotec.</p> <p>This 11.4km<sup>2</sup> previously predicted was for the Projects built together and represented the entire predicted habitat loss across the Offshore Development Area, not just the Dogger Bank SAC. The table presented shows the area in the Dogger Bank SAC only (which takes out much of the ECC). The worst case habitat loss for both Projects over the entire Offshore Development Area is 3.95km<sup>2</sup> (see section 9.6.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>)</p> <p>The Offshore Development Area has been refined and the Array Areas are smaller. In addition, suction bucket jackets and gravity-based foundations have been removed from the Array Areas, which has overall reduced the size.</p> <ul style="list-style-type: none"> <li>• Offshore platforms now only use monopiles as a worst-case.</li> <li>• Suction buckets and gravity based have been removed from the entire Array Area.</li> </ul> <p>This has been considered under another seabed type and will be made clear in the assessment. The Projects are not committing to the removal of scour protection at this time. This has been assessed as permanent habitat loss in section 9.6.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>). Scour and cable protection would likely be left <i>in situ</i> unless removal is deemed to be of a greater benefit to the environment at the time of decommissioning (see section</p>



Comment	Project Response
<p>Cefas asked if the extent of the piddocks habitat was known and whether there is any geophysical data to see the general overlap with installation works (piling)?</p>	<p>9.6.4 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>.</p> <p>A drop-down camera and then grab sampling was carried out during the site specific surveys, which only identified the species at two locations in DBS East (see <b>Volume 7, Appendix 9-3 Benthic Ecology Monitoring Report (application ref: 7.9.9.3)</b>). As the turbine layout is not know yet, an overlap with these locations is not yet known. Pre-construction monitoring would be completed to identify any habitats where an overlap would occur.</p>
<p><b>Natural England Discretionary Advice Service Letter - 12/02/2024</b></p>	
<p>This advice is being provided as part of Natural England’s Discretionary Advice Service in accordance with the Quotation and Agreement dated 3rd February 2022. Natural England attended the Expert Topic Group meeting on Marine Physical Processes and Benthic Ecology, which was held on 29th January 2024. Here, we provide written comments on the materials discussed.</p> <p>The following advice is based upon the information within:</p> <ul style="list-style-type: none"> <li>240129 RWE ETG Marine Physical Processes &amp; Benthic Ecology Slide pack</li> </ul> <p><u>Draft RIAA conclusions</u></p> <p>The Project confirmed during the ETG that they are not intending to commit to the removal of cable and scour protection at decommissioning of the Project, and it will therefore be considered a permanent impact in the assessment. Whilst we acknowledge that a conclusion of Adverse Effect on Integrity on Dogger Bank SAC has already been confirmed for the Project in the Plan Level HRA, it should still be demonstrated that the mitigation hierarchy has been applied with efforts made to avoid and reduce impacts wherever possible. We highlight that the lower the Project’s impact, the less will be required to be delivered in compensation. As stated in our previous advice (ref DAS/452712, dated 30th October 2023), we strongly advise that a commitment is made to removal at decommissioning.</p> <p>We note that advances in technology and engineering methods could allow for complete removal of offshore windfarm infrastructure. We consider that the decommissioning plan should commit to removal of infrastructure so as to not have a long-lasting impact on the seabed. The material used for construction and maintenance should allow this where possible (and be reflected in the maintenance plan for the windfarm as technology and engineering methods improve). Where it is the intention to leave material in situ, the worst case scenario should detail the impacts of leaving material on the seabed for the products’ life expectancy.</p>	<p>The Projects are not committing to the removal of scour protection at this time. This has been assessed as permanent habitat loss in section 9.6.3.3 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>. Scour and cable protection would likely be left <i>in situ</i> unless removal is deemed to be of a greater benefit to the environment at the time of decommissioning (see section 9.6.4 of <b>Volume 7, Chapter 9 Benthic and Intertidal Ecology (application ref: 7.9)</b>).</p> <p>As per the <b>Draft DCO (application ref: 3.1)</b> a Decommissioning Programme would be submitted for approval before the start of any offshore works.</p>



**RWE Renewables UK Dogger  
Bank South (West) Limited**

**RWE Renewables UK Dogger  
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