

**Norfolk Boreas Offshore Wind Farm**

# **Statement of Common Ground**

**Marine Management Organisation**

**(Version 3)**

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*Photo: Ormonde Offshore Wind Farm*

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## Glossary of Acronyms

AEol	Adverse Effect on Integrity
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CIA	Cumulative Impact Assessment
DCO	Development Consent Order
DML	Deemed Marine Licence
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
ExA	Examining Authority
FLOWW	Fishing Liaison with Offshore Wind and Wet Renewables
HHW SAC	Haisborough Hammond and Winterton Special Area of Conservation
HRA	Habitats Regulations Assessment
HDD	Horizontal Directional Drilling
IPMP	In Principle Monitoring Plan
LIDAR	Light Detection and Ranging
LSE	Likely Significant Effect
MMMP	Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
OOOMP	Outline Operations and Maintenance Plan
PEIR	Preliminary Environmental Information Report
PTS	Permanent Threshold Shift
SoCG	Statement of Common Ground
SAC	Special Area of Conservation
SCI	Site of Community Importance
SIP	Site Integrity Plan
SNS	Southern North Sea
SNCB	Statutory Nature Conservation Bodies
SoCG	Statement of Common Ground
UXO	Unexploded Ordnance

## Glossary of Terminology

Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and information to support the HRA.
Array cables	Cables which link wind turbine to wind turbine, and wind turbine to offshore electrical platforms.
Interconnector cables	Offshore cables which link offshore electrical platforms within the Norfolk Boreas site
Landfall	Where the offshore cables come ashore at Happisburgh South
Norfolk Boreas site	The Norfolk Boreas wind farm boundary. Located offshore, this will contain all the wind farm array.
Norfolk Vanguard	Norfolk Vanguard offshore wind farm, sister project of Norfolk Boreas.
Offshore cable corridor	The corridor of seabed from the Norfolk Boreas site to the landfall site within which the offshore export cables will be located.
Offshore electrical platform	A fixed structure located within the Norfolk Boreas site, containing electrical equipment to aggregate the power from the wind turbines and convert it into a suitable form for export to shore.
Offshore service platform	A platform to house workers offshore and/or provide helicopter refuelling facilities. An accommodation vessel may be used as an alternative for housing workers.
Offshore project area	The area including the Norfolk Boreas site, project interconnector search area and offshore cable corridor.
Project interconnector cable	Offshore cables which would link either turbines or an offshore electrical platform in the Norfolk Boreas site with an offshore electrical platform in one of the Norfolk Vanguard OWF sites.
Project interconnector search area	The area within which project interconnector cables would be installed.
The Applicant	Norfolk Boreas Limited

## 1 INTRODUCTION

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This Statement of Common Ground (SoCG) has been prepared between the Marine Management Organisation (MMO) and Norfolk Boreas Limited (hereafter the Applicant) (together 'the parties') to set out the areas of agreement and ongoing discussion in relation to the Development Consent Order (DCO) application for the Norfolk Boreas Offshore Wind Farm (hereafter 'the project'). A full description of the project can be found in Chapter 5 of the Environmental Statement (document reference 6.1.5 of the Application, APP-218).

This SoCG comprises an agreement log which has been structured to reflect the topics of interest to the MMO with regard to the Norfolk Boreas DCO application (hereafter 'the Application'). The agreement logs (section 2) outline all topic specific matters agreed, not agreed and actions to resolve between the MMO and the Applicant.

The Applicant has had regard to the Guidance for the examination of applications for development consent (Department for Communities and Local Government, 2015) when compiling this SoCG. Matters that are not agreed will be the subject of ongoing discussion wherever possible to resolve or refine the extent of disagreement between the parties.

It is the intention that this document will help facilitate post-application discussions between the parties and also give the Examining Authority (ExA) an early sight of the level of common ground between both parties from the outset of the examination process.

### 1.1 Consultation with the MMO

This section briefly summarises the consultation that the Applicant has had with the MMO. Further information on the consultation process is provided in the Consultation Report (document reference 5.1 of the Application, APP-027).

#### 1.1.1 Pre-Application

The Applicant has engaged with the MMO regarding the project during the pre-Application process, both in terms of informal non-statutory engagement and formal consultation carried out pursuant to Section 42 of the Planning Act 2008. Due to similarities between the Norfolk Boreas project and its 'sister' project Norfolk Vanguard, which is approximately one year ahead of Norfolk Boreas in its development schedule, early consultation with stakeholders was conducted for both projects concurrently. Although latterly, consultation has been undertaken separately for the two projects, Norfolk Boreas has had regard to the Norfolk Vanguard consultation and many of the agreements achieved for the Norfolk Vanguard project also apply to the Norfolk Boreas project.

During formal (Section 42) consultation, the MMO provided comments on the Preliminary Environmental Information Report (PEIR) by way of a letter dated 7<sup>th</sup> December 2018.



Further to the statutory Section 42 consultation, meetings were held with the MMO through the Evidence Plan Process. Table 1 provides an overview of key meetings and correspondence undertaken with the MMO. Minutes of the meetings are provided as Appendices to the consultation report (document reference 5.1 of the Application, APP-027).

### 1.1.2 Post-Application

As part of the pre-examination process, the MMO submitted a Relevant Representation to the Planning Inspectorate on the 30<sup>th</sup> August 2019. The MMO will also engage throughout the Examination deadlines and Issue Specific Hearings. Key post application consultation is also provided in Table 1 below.

**Table 1 Summary of Consultation with the MMO**

Date	Contact Type	Topic
<b>Pre-Application</b>		
21 <sup>st</sup> March 2016	Benthic and Geophysical Survey Scope Meeting	Discussion on the required scope of the geophysical surveys to inform the approach to the offshore surveys which cover the Norfolk Boreas offshore cable corridor and part of the project interconnector search area. The surveys were conducted in Summer/Autumn 2016
22 <sup>nd</sup> June 2017	Email from the Applicant	Provision of survey reports relevant to the Norfolk Boreas offshore cable corridor and project interconnector search area. These were discussed at the Norfolk Vanguard Benthic Ecology and Marine Physical Processes Expert Topic Group meeting held on the 7 <sup>th</sup> July 2017.
17 <sup>th</sup> November 2017	Email from the Applicant	Provision of a report demonstrating that the sediment contaminant samples and benthic ecology samples collected and analysed were sufficient to characterise the Norfolk Boreas site.
19 <sup>th</sup> December 2017	Letter from the MMO	Letter from the MMO confirming that no additional sampling is required.
16 <sup>th</sup> January 2018	Email from the Applicant	Provision of the following draft technical reports to support the Information to Support HRA report: <ul style="list-style-type: none"> <li>Appendix 7.1 ABPmer Sandwave study; and</li> <li>Appendix 7.2 Envision Sabellaria data review</li> </ul>
5 <sup>th</sup> February 2018	Emails from the Applicant	Provision of the following Method Statements to the MMO: <ul style="list-style-type: none"> <li>Marine Physical Processes, Marine water and Sediment Quality, Benthic and intertidal Ecology, Fish ecology (see Appendix 9.16 of the Consultation Report document reference 5.1.9.16 of the application APP-053);</li> <li>Marine Mammal ecology (see Appendix 9.26 of the Consultation Report document reference 5.1.9.26 of the application APP-063);</li> </ul>



Date	Contact Type	Topic
		<ul style="list-style-type: none"> <li>Offshore ornithology (see Appendix 9.27 of the Consultation Report document reference 5.1.9.27 of the application APP-064);</li> </ul>
12 <sup>th</sup> March 2018	Norfolk Boreas-Marine mammal ETG Meeting	Agreement on the methods used to conduct the assessment (minutes provided in Appendix 9.43 of the Consultation report (document reference APP-082).
14 <sup>th</sup> March 2018	Norfolk Boreas-Marine Physical Processes, Benthic Ecology and Fish ETG meeting	Agreement of the methods to be used in the EIA (minutes provided in Appendix 9.43 of the Consultation report (document reference APP-080).
17 <sup>th</sup> October 2018	Email from the Applicant.	Early provision of relevant chapters of the PEIR Chapter.
7 <sup>th</sup> December 2018	Letter from the MMO	MMOs response to the Norfolk Boreas PEIR.
21 <sup>st</sup> February 2019	Marine Mammals Expert Topic Group meeting	Comments on PEIR and agreement on the approach to HRA (minutes provided in Appendix 28.1 of the Consultation report (document reference 5.1.28.1 of the Application, APP-192).
22 <sup>nd</sup> March 2019	Email from the Applicant	Provision of draft Norfolk Boreas Information to Support Habitats Regulations Assessment (HRA) report.
22 <sup>nd</sup> March 2019	Email from the Applicant	Provision of draft DCO and other draft DCO documents for review
15 <sup>th</sup> May 2019	Letter from the MMO	Comments on draft DCO and other DCO documents
13 <sup>th</sup> June 2019	Email from the Applicant	Provision of early access to relevant documents from the DCO application.
<b>Post-Application</b>		
30 <sup>th</sup> August 2019	Relevant Representation	The MMO's initial feedback on the DCO application.
18 <sup>th</sup> October 2019	Relevant Representation and SoCG meeting	To discuss responses to Relevant Representation and agree SoCG
27 <sup>th</sup> November 2019	SoCG update meeting	To discuss how issues of ongoing discussion can be progressed. Covered all topics with underwater noise and Fish specialists.
9 <sup>th</sup> January	SoCG update meeting	To agree how issues of ongoing discussion can be progressed and close out existing issues.
20 <sup>th</sup> January	SoCG update meeting	To agree how issues of ongoing discussion can be progressed and close out existing issues. Covered all topics with Benthic specialists.
17 <sup>th</sup> January	SoCG update meeting	To agree how issues of ongoing discussion can be progressed and close out existing issues.

## 2 STATEMENT OF COMMON GROUND

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Within the sections and tables below, the different topics and areas of agreement and disagreement between the MMO and the Applicant are set out.

Within the agreement logs '(D2)' (D6) etc. denotes where issues have been progressed since the original submission on the 4<sup>th</sup> November.

### 2.1 Marine Geology, Oceanography and Physical Processes

The project has the potential to impact upon Marine Geology, Oceanography and Physical Processes. Chapter 8 of the Norfolk Boreas Environmental Statement (ES) (document reference 6.1.8 of the Application, APP-221) provides an assessment of the significance of these impacts.

Table 2 provides areas of agreement (common ground) and areas of ongoing discussion regarding Marine Geology, Oceanography and Physical Processes.

Minutes of Evidence Plan meetings can be found in Appendix 9.43 and Appendix 28.1 of the Consultation Report (APP-080 and APP-192 respectively).

Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Environmental Impact Assessment</b>			
Existing Environment	<p>Survey data collected for Norfolk Boreas for the characterisation of Marine Geology, Oceanography and Physical Processes are suitable for the assessment.</p> <p>The Seabed mobility report was submitted to the Norfolk Boreas Examination at deadline 1 (REP1-040). The results of the study further support the evidence provided within the Environmental Statement (ES) and information to support HRA. The preliminary findings were already integrated within the ES and the final report only serves to confirm those initial findings. Therefore, the conclusions made in Chapter 8 Marine Geology, Oceanography and Physical Processes (APP-221) remain relevant, as do those which use the findings of chapter 8 to underpin assessments on marine ecology</p>	<p>The MMO agreed this to be true for the Norfolk Vanguard SoCG (Document Reference: REP9-045 of the Norfolk Vanguard Examination). Survey data collected for the Norfolk Vanguard project covers the Norfolk Boreas offshore cable corridor and the Norfolk Boreas project interconnector search area.</p> <p>The MMO agreed a meeting on the 14<sup>th</sup> March 2018 and in the subsequent agreement log the MMO stated that they were confident that the data proposed [which included the survey of the Norfolk Boreas site] appears adequate.</p> <p>The MMO do note in the Relevant Representation (30 August 2019) that:</p> <p>The seabed mobility studies are not completed for inclusion in the ES. Paragraph 47 states that further surveys would be commissioned and used to update and validate previous preliminary findings, but the report does not state how and where this data should be reported. The MMO requires an update on the report during examination to ensure this is assessed fully.</p> <p>(D6) The MMO have reviewed the Seabed mobility study submitted at Deadline 1 and concludes that the report adds little to the understanding of how the structures would</p>	(D6) Agreed

**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		alter seabed processes, and so does not contradict the conclusions of the ES.	
	The ES adequately characterises the baseline environment in terms of Marine Geology, Oceanography and Physical Processes.	The MMO Relevant Representation (30 August 2019) states: The existing environment has been characterised appropriately within the ES for coastal processes.	Agreed
Assessment methodology	Appropriate legislation, planning policy and guidance relevant to Marine Geology, Oceanography and Physical Processes has been used. The Planning statement (document reference 8.1 of the Application, APP-693) provides detail of how the application complies with the East Inshore and Offshore Marine Plans. Further to this, the Applicant submitted a checklist of East Inshore and Offshore Marine Plans Objectives to the Norfolk Boreas Examination at Deadline 1 (REP1 –038)	The MMO have reviewed the check list and can now confirm agreement	Agreed
	The list of potential impacts assessed for Marine Geology, Oceanography and Physical Processes is appropriate.	<p>MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.</p> <p>However, the MMO did make the following comment in the Relevant Representation (30 August 2019):</p> <p>The Applicant has defined the East Anglia coastline, the sandbanks and designated features of the nearby SACs and chalk beds Marine Conservation Zone as key receptors, which is appropriate. Due to their distance from the majority of development activities and the demonstrated lack of sediment transport</p>	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice. A SoCG has been prepared between the Applicant and Natural England.

Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>The impact assessment methodologies used provide an appropriate approach to assessing potential impacts of the proposed project. This includes:</p> <ul style="list-style-type: none"> <li>The assessment using expert judgement based upon knowledge of the Norfolk Boreas site and available contextual information (Zonal and East Anglia ONE studies and modelling) – therefore no new modelling (e.g. sediment plumes or deposition) was undertaken for the assessment.</li> <li>The definitions used for sensitivity and magnitude in the impact assessment are appropriate.</li> </ul> <p>These methodologies are in line with the Method Statement provided 5<sup>th</sup> February 2018 (see Appendix 9.16 of the Consultation Report (document reference 5.1.9.16 of the Application-APP53) and as discussed during expert topic group meetings.</p> <p>The applicant does acknowledge that there is risk associated with the expert based approach however, the applicant believe that the level of risk is very low due to the distance from sensitive receptors and therefore the assessment is proportionate to the level of risk posed by the project.</p>	<p>pathways, impacts are generally assessed as negligible (paragraph 431 of ES Chapter 8).</p> <p>Ongoing discussion</p> <p>The MMO agree the majority of the methods used. However, the MMO has concerns and raised this in the Relevant Representation (30 August 2019):</p> <ul style="list-style-type: none"> <li>The conceptual model does not provide strong numerical support for the majority of the assessments of significance and ‘expert-based’ assessment method appears to rely on the interpretation of the chapter author. Though the MMO sees no specific reason to dispute most of the findings it is clear that this approach is applicable only in specific circumstances where sufficiently robust studies can be applied with a high level of confidence. The risk in this case is that coincident changes to designated features within the SAC may not be clearly dissociated from the development of multiple OWFs. Hence there is a clear need for scrutiny of post-development monitoring plans and results.</li> </ul> <p>The MMO understand that the Applicant acknowledge this risk and therefore can agree the position.</p>	<p>Agreed</p>

**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	The worst case scenario used in the assessment for Marine Geology, Oceanography and Physical Processes is appropriate.	The MMO agreed this in the Evidence Plan Process agreement logs. This was also agreed in the Norfolk Vanguard SoCG (REP9-045 of the Norfolk Vanguard Examination), and the same methods were used to identify the worst case scenario for both projects.	Agreed
Assessment findings	The characterisation of sensitivity for Marine Geology, Oceanography and Physical Processes receptors (i.e. the East Anglian Coast and relevant designated sites) is appropriate.	As per the Relevant Representation: The MMO is satisfied with the receptors identified.	Agreed
	The magnitude of effect is correctly identified.	Agreed	Agreed
	The impact significance conclusions of negligible significance for Norfolk Boreas alone are appropriate.	Agreed	Agreed
Cumulative Impact Assessment (CIA)	The plans and projects considered within the CIA are appropriate and as agreed during the expert topic group meeting on 14 <sup>th</sup> March 2018	The EPP agreement log contained the following position:  The list appears to be relevant and the MMO do not know of any other projects which should be included or considered at this time.	Agreed
	The CIA methodology is appropriate.  The applicant does acknowledge that there is risk associated with the conceptual approach however, the applicant believe that the level of risk is very low due to the distance from sensitive receptors and therefore the assessment is proportionate to the level of risk posed by the project.	The MMO in the Relevant Representation (30 August 2019) made the following comments: <ul style="list-style-type: none"> <li>The MMO has concerns over the cumulative impact assessments as these remain a source of inconsistency across the field of impact assessment with significant differences in depth between offshore wind farm (OWF) projects. In response to previous comments, the assessment provided for Norfolk Boreas (Section 8.8) is relatively detailed but is significantly limited</li> </ul>	Agreed

**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>by the use of a conceptual modelling approach as stated in comment 4.2.5. The impacts are defined qualitatively the MMO considers the significance assessments to be generally reasonable.</p> <p>The MMO understand that the Applicant acknowledge this risk and therefore can agree the position.</p>	
	<p>The cumulative impact conclusions of negligible significance are appropriate.</p> <p>The distance between each export cable installation is sufficiently great that the partial growth and then migration rate of a pre-swept sand wave would not allow the sand wave to reach the destination of the next phase of pre-sweeping before it starts. Hence, it would not be possible for sand waves to be impacted by pre-sweeping on multiple occasions.</p> <p>As stated above the applicant do acknowledge that there is risk associated with the conceptual approach however, the applicant believe that the</p>	<p>The MMO in the Relevant Representation (30 August 2019) made the following comments:</p> <ul style="list-style-type: none"> <li>• The assessment of multiple phases of impact of sandwaves shows that this would not have any significant effect because of the active nature of the sand wave field, promoting persistent generation and repair. The MMO believes this a reasonable conclusion but there is little or no field or modelling evidence to back up this intuition and highlights that this leaves the conclusion open to challenge were any conflicting evidence to be presented.</li> <li>• Paragraph 447 (ES Chapter 8) suggests that multiple episodes of impact on a single sand wave is now discounted, the MMO requests further information on how this conclusion has been reached.</li> <li>• The weakest aspect of the cumulative assessment is the interpretation of the overlapping areas of influence (on wave, tide and sediment mobility and transport) due to Norfolk Boreas, Norfolk Vanguard and East Anglia Three windfarms. Figures</li> </ul>	<p>Agreed The MMO have some concerns over the level of confidence in the conclusion of the CIA however generally agree that the level of risk is likely to be minimal.</p>



**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>level of risk is very low due to the distance from sensitive receptors and therefore the assessment is proportionate to the level of risk posed by the project.</p>	<p>8.15/8.16 (ES Chapter 8) show overlapping areas of individual influence, rather than a strictly cumulative impact. For example, the ‘recovery’ of wave conditions in the lee of the first OWF may be reduced by the presence of the second and third, potentially extending the area of cumulative effect. The MMO highlights that the conceptual modelling approach is unable to take account of this possibility and the conclusion that the area of impact does not extend onto the receptor (HHW SAC) is not well supported.</p> <p>Further comments:            The MMO note the effects of repeated replacement and reburial are not known. Some general speculation can be made. The assumption is that the sandwaves will ‘recover’ in as much as reforming a new configuration which is likely to be similar, but deviate from, the original pattern. Assuming that the repeat disturbance occurs before the sandwave fields have fully recovered, the recovery will be delayed and the deviation from the original pattern will possibly increase.</p> <p>In terms of sand transport, the forcing processes will not change, and transport rates will re-establish similar to what would have existed without disturbance. Present understanding of general sandbank dynamics is not sufficient to say what the impact of short-term disturbance is on sandbank evolution but is generally assumed</p>	

**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>to be minimal - because the sandbank features are a considerable mass and a degree of 'inertia' is assumed such that longer-term forcing changes would be required to drive major change. The MMO note this is still a matter of conjecture and ongoing research - some sandbanks are, nevertheless known to be dynamic features despite relatively little measurable variation in hydrodynamics and sediment transport and it is not known what hydrodynamic or sediment supply changes cause the long-term patterns of change observed.</p> <p>The MMO would highlight that prolonged disturbance and interruption to the 'natural' pattern is likely to increase the chances that longer-term changes may develop, but that it would not be possible to determine whether any changes would be (or, if observed, whether they had been) due to the sandwave disturbance, or if they were unrelated.</p> <p>This is particularly the case in this instance because the evidence provided is conceptual only and there is no site-specific model of the sand wave and sandbank system concerned. Any such model would, equally, be subject to the restriction in terms of our incomplete understanding of the dynamics.</p>	

Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Habitats Regulations Assessment (HRA)</b>			
Screening of Likely Significant Effect (LSE)	<p>The approach to HRA Screening is appropriate. The following site is screened in for further assessment as agreed during the expert topic group meeting in July 2017:</p> <ul style="list-style-type: none"> <li>Haisborough, Hammond and Winterton Special Area of Conservation (SAC)</li> </ul>	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice. A SoCG has been prepared between the Applicant and Natural England.
Assessment of Adverse Effect on Integrity	The approach to the assessment of adverse effect on integrity is appropriate.	<p>MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice. However the following comments are provided in the MMOs relevant representation (30 August 2019):</p> <p>The description of the HHW SAC in Table 8.11 on page 48 of the relevant ES Chapter 8 and associated text (Section 8.7.11) discusses only the designated features (sandbanks) and Sabellaria reefs, but in the impact assessments for the offshore cable laying, where relevant, the other key features of the SAC which are affected (i.e. sand waves, and their associated sediment transport function) are discussed in a manner equivalent to their having been defined as a receptor. The assessment is then applied to the HHW SAC as a whole, based on this detailed consideration of the relevant sub-set of processes within the SAC which is appropriate. The MMO is satisfied with the receptors identified.</p>	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice. A SoCG has been prepared between the Applicant and Natural England.
	The physical processes of Annex 1 Sandbanks in the Haisborough, Hammond and Winterton SAC will be unaltered by the installation works and the	Agreed, noting that there is limited empirical evidence and sandbank recovery should be monitored (see monitoring below). The MMO	

Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes

Topic	Norfolk Boreas Limited position	MMO position	Final position
	temporary physical disturbance of the sandbanks from construction and maintenance activities will recover, within a reasonable timeframe.	defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) on what a 'reasonable timeframe' is and the assessment of adverse effect on integrity.	conservation advice within the SAC.
	The small scale of <u>cable protection</u> assessed will not interfere with the physical processes associated with the Annex 1 Sandbanks.	<p>The main concerns are the prospect of repeated need to replace and/or rebury cable e.g. due to inadequate burial, subsequent exposure or other cable failure. Despite the installation plan being designed to minimise disturbance in the SAC, the assessment allows for 10km of cable replacement every 5 years.</p> <p>The assessment appears to consider that this would not result in repeated phases of impact to the individual sandwaves, though it would represent repeated impacts at a single location. The assessment of negligible impact relies on the conceptualisation of the sandwave field as being resilient to disturbance and this assumption should be tested by targeted monitoring post-development.</p> <p>The MMO considers that monitoring of the sandwave recovery following sweeping should be carried out, particularly in the SAC to ensure that impacts are in line with those projected in the ES. This is because the majority of the assessment of significance is based on the assertion that the sandwave field is resilient due to continuous rapid sandwave reformation. Subsequent decisions on future applications for rework within this development may depend on this being demonstrated. Monitoring should</p>	(D6) MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice within the SAC.

Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes

Topic	Norfolk Boreas Limited position	MMO position	Final position
		include a sufficient distance downstream (in the direction of sandwave migration), to test the hypothesis that impacts are confined locally. This should be captured within the DML.  (D6) The MMO agrees the comments have been adequately addressed by the Applicant and requires no further information from the Applicant at this time. In relation to HRA details the MMO defers to SNCB.	
	The conclusions of no adverse effect on site integrity in relation to the physical processes of Annex 1 Sandbanks, as presented in the Information to Support HRA report (document 5.3), are appropriate.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.
<b>Mitigation and Management</b>			
Mitigation and Management	Given the impacts of the project, the proposed embedded mitigation outlined in the Schedule of Mitigation (document 6.5) and Section 8.7.4 of ES Chapter 8 is appropriate.	As per the MMOs Relevant Representation (30 <sup>th</sup> August 2019): The schedule of marine process mitigation measures is largely directed at impacts within the development site (as opposed to specific measures to protect receptors, since there are no significant impacts expected) and to minimise the need for repeat disturbance where possible, these have been developed through the expert topic group process and the MMO are not aware of other significant measures which could be applied.	Agreed
Mitigation and Management	Mitigation and Management associated with the Haisborough, Hammond and Winterton SAC is secured through the Haisborough, Hammond and	Agreed, noting that the MMO has major concerns in relation to the use of a SIP and	Agreed

**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	Winterton SAC SIP in accordance with condition 9(1)(m) of the Transmission DMLs (Schedules 11 and 12)	regarding setting a precedent for using a SIP approach for other offshore wind farms	
Monitoring	<p>As stated in the In Principle Monitoring Plan (IPMP) (document 8.12, (APP-703)), swath-bathymetric surveys would be undertaken pre- and post-construction in order to monitor changes in seabed topography, including any changes as a result of sand wave levelling.</p> <p>The IPMP provides an appropriate framework to agree monitoring requirements with the MMO.</p>	<p>Ongoing discussion, noting that as stated in the Relevant Representation: There is a clear need for scrutiny of post-development monitoring plans and results.</p> <p>The response provide in Table 8.2 to a query regarding average sediment depth for wave clearance indicates that ES Chapter 8 now refers only to an average (presumed 3m) depth for sand wave clearance (where previously a range between &lt;3m and 9m had been variously mentioned). The MMO requires clarity on whether there are still areas of sandwaves which would be subject to lowering by 9m. The MMO highlights that if this is the case, these areas may respond very differently to areas with only 3m of lowering, particularly in respect of sand wave regeneration. The implication of the sandwave levelling report is that the target burial depth will be achieved by removal of sandwave crests which are then expected to reform over the buried cable. The MMO has concerns that the material needed to reform the sandwave crest may be partly derived from the levelled area (which will be exposed to the hydrodynamic forcing and hence subject to potential erosion, reducing the burial depth of the cables). In addition, whether this would be of greater concern in cases with very large amounts of sand removed? The science of sandwave reformation is not yet widely</p>	<p>It is agreed by both parties that the IPMP provides an appropriate framework to agree monitoring requirements with the MMO subject to any developments/amendments.</p>

**Table 2 Agreement Log - Marine Geology, Oceanography and Physical Processes**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>understood and this implies a need to develop a clearly targeted plan of monitoring of post-development recovery as a minimum requirement based on detailed design information. The MMO recommends that this is part of the post consent monitoring.</p> <p>(D6) The MMO is content that monitoring can be agreed through the IPMP. The IPMP states:</p> <p><i>Further surveys may be required at a frequency to be agreed with the MMO (e.g. 3 years non-consecutive e.g. 1, 3 and 6 years or 1, 5 and 10 years). If evidence of recovery is recorded and agreed with the MMO, monitoring will cease.</i></p>	



## 2.2 Marine Water and Sediment Quality

The project has the potential to impact upon Marine Water and Sediment Quality. Chapter 9 of the Norfolk Boreas ES (APP-222) provides an assessment of the significance of these impacts.

Table 3 provides areas of agreement (common ground) and areas of ongoing discussion regarding Marine Water and Sediment Quality.

Minutes of Evidence Plan meetings can be found in Appendix 9.43 and Appendix 28.1 of the Consultation Report (APP-080 and APP-192 respectively).

**Table 3 Agreement Log - Marine Water and Sediment Quality**

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Environmental Impact Assessment</b>			
Existing Environment	Survey data collected for Norfolk Boreas for the characterisation of Marine Water and Sediment Quality are suitable for the assessment and as agreed by email from the MMO on 19 <sup>th</sup> December 2017.	The MMO in the Relevant Representation (30th August 2019) state: The MMO is content with the spatial distribution of the samples.	Agreed
	The ES adequately characterises the baseline environment in terms of Marine Water and Sediment Quality.	As per the MMOs Relevant Representation: The existing environment has been appropriately characterised.	Agreed
Assessment methodology	The list of potential impacts on Marine Water and Sediment Quality assessed is appropriate.	Agreed, noting that as provided in the Relevant Representation: If [when cleaning] foundations show signs of rust or paint flaking, the assessment will require amending a new marine licence to be applied for.	Agreed
	<p>The impact assessment methodology is appropriate and is in line with the Method Statement provided in February 2018 (see Appendix 9.16 of the Consultation Report, APP-053) and agreed during the topic group meeting in February 2018.</p> <p>The Applicant outlined its position on hydrodynamic modelling in the Written Summary of the Applicant's Oral Case at Issue Specific Hearing 2 (REP1-042)</p>	<p>Ongoing discussion</p> <p>The MMO note in the relevant representation that In paragraph 103 (ES Chapter 9), it states that: <i>'expert based assessment suggests that, due to the predominance of medium grained sand . . . sediment released at the water surface from the dredger vessel would fall rapidly (minutes or tens of minutes) to the seabed as a . . .'</i></p> <p>The MMO requests clarity on what is this 'expert assessment' based on. The MMO expects that for a disposal of this magnitude for the assessment to be informed by hydrodynamic modelling.</p> <p>Paragraph 104 also appears to base the assessment of the increased suspended sediment on expert judgement as approximations are given. Given the magnitude of</p>	Agreed

**Table 3 Agreement Log - Marine Water and Sediment Quality**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>the disposal operations and the long term nature (daily for up to 18 months), the MMO would expect an assessment of these cumulative disposals to be informed by modelling before the commencement of works.</p> <p>The MMO considers points 4.3.7 and 4.3.8 above indicates the need for modelling and the MMO requests this is discussed during the examination stage.</p> <p>The MMO notes that in section 6.1.1.2 (8.15 Proposed Sediment Disposal Sites Site Characterisation Report) states that the suspended sediment is based on the modelling undertaken for East Anglia Three Offshore Wind Farm. As raised in comment 4.2.5 the MMO have concerns on the risk in using this approach.</p> <p>Following the applicant's submission of written Summary of the Applicant's Oral Case at Issue Specific Hearing 2 (REP1-042). The MMO are content that hydrodynamic modelling is not required for the assessment.</p>	
	The worst case scenario used in the assessment for Marine Water and Sediment Quality is appropriate.	<p>The MMO note in the relevant representation that: the MMO recommends a table that highlights the worst case scenarios within each development consent option.</p> <p>Following discussions with the applicant it has been agreed that this kind of table is no longer required.</p>	Agreed
Assessment findings	The characterisation of receptor sensitivity is appropriate.	Agreed	Agreed
	The magnitude of effect is correctly identified.	Agreed	Agreed

**Table 3 Agreement Log - Marine Water and Sediment Quality**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	The impact significance conclusions of negligible or minor adverse significance for Norfolk Boreas alone are appropriate.	Agreed	Agreed
Cumulative Impact Assessment (CIA)	The plans and projects considered within the CIA are appropriate.	As per the MMOs Relevant Representation: The Applicant has considered both intra-project and cumulative impacts in the environmental statement and the MMO is content with the assessment from a dredging, disposal and contamination perspective.	Agreed
	The CIA methodology is appropriate.		
	The cumulative impact conclusions of negligible or minor significance are appropriate.		
<b>Mitigation and Management</b>			
Mitigation and Management	Given the predicted impacts of the project, the proposed mitigation is adequate.	Agreed	Agreed
Monitoring	<p>Given the predicted impacts of the project, no monitoring of marine water and sediment quality is proposed.</p> <p>(D6) IPMP has been updated to include the following wording: <i>'Should dredging of sandwaves be required within 2km of the coast an appropriate sediment sampling regime would be agreed with the MMO in the final IPMP.'</i></p>	<p>Given the low contamination levels of sediment (as shown in table 3.3 of the Site Characterisation Report), this is acceptable. However, the MMO (Relevant Representation) advise:</p> <p>That new samples are taken prior to the commencement of construction works if this area [close to the coast] is to be dredged.</p> <p>The MMO are happy to liaise with the applicant to ensure the sampling regime is fit for purpose in relation to schedules 9-13, Part 3, 1(c), for any samples that are to be taken to inform dredging and disposal operations.</p> <p>(D6) The MMO is currently awaiting confirmation from our Scientific Advisors.</p>	Ongoing discussion

### 2.3 Benthic and Intertidal Ecology

The project has the potential to impact upon Benthic and Intertidal Ecology. Chapter 10 of the Norfolk Boreas ES (APP-223) provides an assessment of the significance of these impacts.

Table 4 provides areas of agreement (common ground) and areas of ongoing discussion regarding Benthic and Intertidal Ecology.

Minutes of Evidence Plan meetings can be found in Appendix 9.43 and Appendix 28.1 of the Consultation Report (APP-080 and APP-192 respectively).

Table 4 Agreement Log - Benthic and Intertidal Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Environmental Impact Assessment</b>			
Existing Environment	Survey data collected for Norfolk Boreas for the characterisation of Benthic and Intertidal Ecology are suitable for the assessment and as agreed in the survey planning meetings in March 2016 February 2017 and through ETG meeting in March 2018.	Agreed	Agreed
	The ES adequately characterises the baseline environment in terms of Benthic and Intertidal Ecology.	As noted in the Relevant Representation: The existing environment has been characterised appropriately within Chapter 10 of the ES for benthic ecology.	Agreed
Assessment methodology	Appropriate legislation, planning policy and guidance relevant to Benthic and Intertidal Ecology has been used. The Planning statement (document reference 8.1 of the Application, APP-693) provides detail of how the application complies with the East Inshore and Offshore Marine Plans. Further to this, the Applicant submitted a checklist of East Inshore and Offshore Marine Plans Objectives to the Norfolk Boreas Examination at Deadline 1 (REP1-038)	The MMO have reviewed the check list and can now confirm agreement	Agreed
	The list of potential impacts on Benthic and Intertidal Ecology assessed (and agreed through the EPP) is appropriate.  (D6) As stated in the Applicants comments on Relevant Representations [AS-024] Table 5 row 60 the Applicant believe that it is highly unlikely that chalk contained in drill arisings will cause an impact to the benthic habitat for the following reasons: <ul style="list-style-type: none"> <li>The geotechnical and geophysical data show that due to the ground conditions, it is very unlikely that any drilling will be required - piles will be driven rather than drilled;</li> </ul>	As stated in the Relevant Representation:  Drill arisings will require disposal at sea only if a monopile or jacket foundation are used. The MMO notes that these arisings may potentially contain chalk which may act to alter the sediment composition of the receiving seabed, particularly if the disposal is localised to one region within the area proposed for licencing. This may lead to a region of altered benthic habitat, to that which was present beforehand, which may not recover to the baseline state due to the different sediment characteristics. The	(D6) Agreed

Table 4 Agreement Log - Benthic and Intertidal Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<ul style="list-style-type: none"> <li>The underlying strata are largely muds and clays, and do not contain chalk; and</li> <li>The volume of any drill arisings will be extremely small relative to the total volume of sediment being transported through the site under natural processes and therefore these arisings would be either covered by other sediment or dispersed.</li> </ul> <p>(D6) The Applicant do not wish to remove the option to use plastic frond mattresses as they have some ecological advantages over other methods of cable protection for example, they would maintain a sedimentary habitat. The Applicant discussed this with the MMO at a meeting on the 20<sup>th</sup> of January 2020 and it was agreed that although the MMO maintain the preference that plastic is not used in the marine environment they agree that it may be useful to keep in the to design envelope in case further evidence proves it has benefits over other methods. Both the OOOMP (document reference 8.11, REP5-029)) and Outline cable and scour protection plan (document reference 8.16, REP5 -039) have been updated to include the following text</p> <p><i>“In light of inadequate scientific evidence at the time of writing regarding the impacts of plastic frond mattresses, the MMO recommend that polypropylene frond mattresses are not used due to the potential for the release of microplastics directly into the benthic habitat and the lack of evidence to the contrary. Therefore, if at the detailed design stage, there is reliable evidence demonstrating that plastic fronding specifically has negative impacts on the environment that outweigh any</i></p>	<p>MMO recommends this potential risk is addressed by the Applicant during examination.</p> <p>(D6) The MMO is content with the Applicant’s response in AS-024.</p> <p>The MMO recognises there is some uncertainty regarding the use of plastic frond mattresses as a means of reducing the impacts of rock placement. However in the light of inadequate scientific evidence regarding the impacts of plastic frond mattresses, it is still the MMO’s position to recommend that polypropylene frond mattresses are not used due to the potential for the release of microplastics directly into the benthic habitat and the lack of evidence to the contrary.</p> <p>(D6) The MMO is content that the updates made to documents 8.11 and 8.16 at Deadline 6 provides clarity on our position and allows for the removal of plastic frond mattresses if required.</p>	



**Table 4 Agreement Log - Benthic and Intertidal Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<i>potential positive impacts then the project would be required to remove plastic frond mattressing from the design."</i>		
	The impact assessment methodology is appropriate, and is in line with the Method Statement provided in February 2018 (see Appendix 9.16 of the Consultation Report (APP-053) and agreed during the topic group meeting in February 2018.	Agreed	Agreed
	The worst case scenario used in the assessment for Benthic and Intertidal Ecology is appropriate.	Agreed	Agreed
Assessment findings	The characterisation of receptor sensitivity is appropriate.	Agreed	Agreed
	The magnitude of effect is correctly identified.	Agreed	Agreed
	The impact significance conclusions of negligible or minor adverse for Norfolk Boreas alone are appropriate.	Agreed	Agreed

Table 4 Agreement Log - Benthic and Intertidal Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>The communities of Annex 1 Sandbanks in the Haisborough, Hammond and Winterton SAC will recover as the communities are habituated to highly mobile sediments.</p>	<p>Agreed, noting that MMO would defer to the SNCBs for advice on whether recovery will occur within a 'reasonable' timeframe for the purposes of the HRA.</p>	<p>It is agreed by both parties that the communities of Annex 1 Sandbanks in the Haisborough, Hammond and Winterton SAC will recover as the communities are habituated to highly mobile sediments, noting that MMO would defer to the SNCBs for advice on whether recovery will occur within a 'reasonable' timeframe for the purposes of the HRA.</p>
	<p><i>Sabellaria spinulosa</i> is ephemeral and is expected to recover/recolonise following temporary physical disturbance during construction, in the unlikely event that micro-siting of the offshore cable is not possible. Effects on <i>S. spinulosa</i> in the Haisborough, Hammond and Winterton SAC are addressed through the Outline Haisborough, Hammond and Winterton SAC SIP.</p> <p>(D6) The Applicant's position on the recoverability of <i>S. spinulosa</i> reef is further discussed in the Applicant's Haisborough Hammond and Winterton Special Area of Conservation Position Paper [REP 5-057]. The paper also fully explores the implications of the project for the EIFCA's proposed fisheries closures highlighting the additional mitigation which has been proposed by the</p>	<p>Agreed, noting that the MMO has concerns in relation to the use of a SIP and regarding setting a precedent for using a SIP approach for other offshore wind farms</p> <p>Note the MMO Relevant representation:</p> <p>The MMO highlights that the Eastern Inshore Fisheries and Conservation Authority (EIFCA) are seeking to introduce fisheries closures to protect <i>S. spinulosa</i>, one of which is in a region which coincides with the export cable route. These closures will likely be in place in advance of any construction works, The MMO expects the implications of this development to be fully explored at examination stage, ensuring that the</p>	<p>Ongoing discussion</p>

Table 4 Agreement Log - Benthic and Intertidal Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>Applicant to not place cable protection (installed to protect cable which has not been buried to the optimum depth) within the priority areas to be managed as <i>S.spinulosa</i> reef, unless agreed with the MMO (in consultation with Natural England) and what the effect of closing the area to fishing pressure is likely to have on the extent of <i>S.spinulosa</i> reef.</p>	<p>impact on potential mitigation is considered.</p> <p>(D6) The MMO has concerns about the use of the HHW SAC SIP and the related condition (Schedule 11 &amp; 12 9(1)(m)). Please find further comments in REP5-073 – response to further written question Q2.1.0.4</p> <p>The MMO welcomes the proposed alternative approach within REP5-057. The MMO has made its position consistently clear regarding the need to make a decision at consenting stage regarding whether there is an adverse effect on the integrity of the HHW SAC.</p> <p>This alternative is relevant if the SoS decides not to defer a decision on adverse effect and therefore removes the need for a SIP as the MMO would prefer.</p> <p>The proposed document and condition is relevant if it is deemed there is an adverse effect (in which case derogation will be dealt with separately) or if it is deemed there is not an adverse effect. In either case, two plan conditions are proposed dealing separately with works within and without the SAC. The MMO considers this an effective approach however would wish to see outline documents fully describing current proposed mitigation to be certificated at the consenting stage.</p>	

**Table 4 Agreement Log - Benthic and Intertidal Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
Cumulative Impact Assessment (CIA)	The plans and projects considered within the CIA are appropriate as agreed during the expert topic group meeting in July 2017.	Agreed	Agreed
	The CIA methodology is appropriate.	As stated in the EPP Benthic Ecology agreement log (February 2019): The MMO are satisfied that the conclusions [of the CIA] are appropriate.  However as stated in the Relevant representation (August 2019) the cumulative impact on the benthos, due to an increase in or maintained suspension of sediment from the expected 30-year operation of these OWFs has not be addressed. The MMO request this is addressed.	(D6) Agreed
	The cumulative impact conclusions of negligible or minor significance are appropriate.	Agreed	It is agreed by both parties that the conclusions of the CIA are appropriate.
<b>Habitats Regulations Assessment (HRA)</b>			
Screening of LSE	The approach to HRA Screening is appropriate. The following site is screened in for further assessment as agreed during the expert topic group meeting in February 2019: <ul style="list-style-type: none"> <li>Haisborough, Hammond and Winterton SAC</li> </ul>	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.
Assessment of Adverse Effect on Integrity	The approach to the assessment of adverse effect on integrity is appropriate.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.

Table 4 Agreement Log - Benthic and Intertidal Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
	The conclusions of no adverse effect on site integrity in the Information to Support HRA report (document reference APP-201) are appropriate.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.
<b>Mitigation and Management</b>			
Mitigation and Management	Given the impacts of the project, the proposed mitigation outlined in the Schedule of Mitigation (document reference APP-688) and section 10.7.1 of ES Chapter 10 (APP-223) is appropriate.	Agreed, the MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) on the appropriateness of mitigation.	Agreed
Mitigation and Management	<p>Mitigation and Management associated with the Haisborough, Hammond and Winterton SAC is secured through the Haisborough, Hammond and Winterton SAC SIP in accordance with condition 9(1)(m) of the Transmission DMLs (Schedules 11 and 12)</p> <p>(D6) The Applicant has presented further information on the Alternative condition as well as the alternative control document, the Cable Specification, Installation and Monitoring Plan (CSIMP) in Additional information to the HHW SAC position paper submitted at deadline 6 [ExA.AS-2.D6.V1]</p>	<p>(D6) The MMO agree that the mitigation and management of the HHW SAC is secured though condition 9(1)(m). However, The MMO has major concerns in relation to the use of a SIP and regarding setting a precedent for using a SIP approach for other offshore wind farms. The MMO welcomes the proposed alternative approach set out by the Applicant in REP5-057.</p> <p>The MMO has made its position consistently clear regarding the need to make a decision at consenting stage regarding whether there is an adverse effect on the integrity of the HHW SAC. This alternative is relevant if the SoS decides not to defer a decision on adverse effect and therefore removes the need for a SIP as the MMO would prefer.</p> <p>The proposed document and condition is relevant if it is deemed there is an adverse effect (in which case derogation will be dealt with separately) or if it is deemed there is not an</p>	Ongoing discussion

**Table 4 Agreement Log - Benthic and Intertidal Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>adverse effect. In either case, two plan conditions are proposed dealing separately with works within and without the SAC. The MMO considers this an effective approach however would wish to see outline documents fully describing current proposed mitigation to be certificated at the consenting stage.</p>	
Monitoring	<p>The IPMP (document 8.12), provides an appropriate framework to agree monitoring with the MMO in consultation with Natural England.</p>	<p>The MMO agree the IPMP provides an appropriate framework to agree the monitoring. The MMO welcome ongoing discussion on:</p> <ul style="list-style-type: none"> <li>• what is included in the IPMP in relation to wider benthic ecology</li> <li>• If the post construction monitoring of any Sabellaria reef identified will be limited to a single event or not and exclusively within the HHW SAC</li> </ul>	(D6) Agreed

Table 4 Agreement Log - Benthic and Intertidal Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>It is acknowledged that the ‘Review of environmental data associated with post-consent monitoring of licence conditions of offshore wind farms, 2014’ were inconclusive and based on round 1 wind farms which are not comparable in size to Norfolk Boreas. The Applicant proposes that targeted monitoring of important Annex 1 habitats would be proportionate and provide appropriate information for Norfolk Boreas.</p> <p>Notwithstanding the above the Applicant has updated the section 4.3 of the IPMP (document reference 8.11 REP5- 031) to make it clear that the scope of the benthic surveys could be expanded post consent if there is good evidence to do so. The updated text states: <i>If, at the time of completion of the final detailed plan, there is good, evidence based, justification for increasing the scope of the benthic surveys to include other benthic monitoring techniques then this will be agreed with the MMO and included within the final plans.</i></p>	<p>Ongoing discussion (D6) The MMO and our Scientific Advisors recognise that the updated text in the IPMP allows for the scope of the benthic surveys to be increased post consent if there is good justification to do so. Therefore this matter can now be agreed</p>	<p>(D6) Agreed</p>

## 2.4 Fish and Shellfish Ecology

The project has the potential to impact upon Fish and Shellfish Ecology. Chapter 11 of the Norfolk Boreas ES (document reference APP-224) provides an assessment of the significance of these impacts.

Table 5 provides areas of agreement (common ground) and ongoing discussion regarding Fish and Shellfish Ecology.

Minutes of Evidence Plan meetings can be found in Appendix 9.43 and Appendix 28.1 of the Consultation Report (APP-080 and APP-192 respectively).



**Table 5 Agreement Log - Fish and Shellfish Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Environmental Impact Assessment</b>			
Existing Environment	<p>The ES adequately characterises the baseline environment in terms of Fish and Shellfish Ecology.</p> <p>No site specific survey data is required for the characterisation of Fish and Shellfish Ecology as agreed by email on 13<sup>th</sup> April 2016.</p>	As noted in the relevant representation: The MMO is content that the characterisation of the existing environment is considered comprehensive and accurate in both ES Chapters 11 and 14	Agreed
Assessment methodology	<p>Appropriate legislation, planning policy and guidance relevant to Fish and Shellfish Ecology has been used. The Planning statement (document reference 8.1 of the Application, APP-693) provides detail of how the application complies with the East Inshore and Offshore Marine Plans.</p> <p>Further to this, the Applicant submitted a checklist of East Inshore and Offshore Marine Plans Objectives to the Norfolk Boreas Examination at Deadline 1 (REP1-038)</p>	The MMO have reviewed the check list and can now confirm agreement	Agreed
	<p>The list of potential impacts on Fish and Shellfish Ecology assessed (as agreed through the EPP) is appropriate.</p>	<p>Ongoing discussion</p> <p>The MMO notes that foundation installation (which is expected to be undertaken over a period of 18 months) will coincide with the winter hibernation period for sandeel. During this period, sandeel remain largely sedentary within their burrows and are therefore more vulnerable to construction activities. It is acknowledged that the overall installation footprint will be minor in the context of the wider project area, and it is therefore</p>	Agreed

Table 5 Agreement Log - Fish and Shellfish Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>surmised that relatively low direct mortality levels will be associated with the foundation installation process themselves (i.e. through physical injury during piling or similar).The MMO recommends the Applicant includes consideration of the installation timing and the associated higher potential impacts to sandeel during the winter hibernation period within the ES.</p> <p>After further discussions with the applicant it has been agreed that ES would not be updated and the main concerns regarding sandeels are due a lack of data over a wider scale and therefore mainly relate to cumulative impacts. Therefore, it can be agreed that the list of potential impacts assessed in the ES are appropriate.</p>	
	<p>The impact assessment methodology is appropriate, and is in line with the Method Statement provided in February 2018 (APP-053) and agreed during the topic group meeting in February 2018.</p>	<p>Agreed</p>	<p>Agreed</p>
	<p>The approach to assessment of impacts from pile driving noise on fish follows current best practice and is therefore appropriate for this assessment, as agreed with Cefas during the expert topic group meeting in February 2019.</p> <p>Underwater noise monitoring will be undertaken as required by condition 19(1) of the Generation Deemed Marine Licence (DML)s.</p>	<p>The MMO are satisfied with the assessment of impacts on fish.</p> <p>The MMO agrees that the IPMP proposes to compare the measured data, from the first four piles of each type (e.g. monopile or pin-pile), with predictions for received levels and source levels that were made in the ES. In the event that any monitored noise levels exceed the predicted levels or impact ranges assessed in the ES, the impact ranges would need to be reconsidered.</p>	<p>Agreed</p>

**Table 5 Agreement Log - Fish and Shellfish Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	The worst case scenario used in the assessment for Fish and Shellfish Ecology is appropriate.	Agreed	Agreed
Assessment findings	The characterisation of receptor sensitivity is appropriate.	<p>The MMO comment in the relevant Representation that:</p> <ul style="list-style-type: none"> <li>• The results of the assessment are generally considered appropriate in the context of the project and that the MMO is content that the key species of concern in terms of conservation importance, sensitivities and fisheries have been identified correctly and are consistent with those indicated in previous advice.</li> <li>• The MMO welcomes the inclusion of results for a stationary receptors for fish considered in the Fish and Shellfish Ecology Chapter 11.</li> <li>• The MMO highlights that section 11.7.4.2 (Impact 2, ES Chapter 11) discusses at length the magnitude of the potential increased suspended sediment concentrations (SSCs), however the discussion of potential effects on fish species are limited and are based on the expectation that most species are highly mobile and will avoid the sediment plumes.</li> <li>• It is noted that specific assessments are included for sandeel, herring and other species with spawning grounds in the area. Comments were raised in response to the Scoping Report (22nd May 2017, Item 24) with regards to known potential impacts of SSC through dredging and deposition which have not been discussed for fish in general within the ES, these were listed as:</li> </ul>	(D6) Agreed, however repeated cumulative impacts are being agreed through the monitoring section.
	The magnitude of effect is correctly identified.		
	<p>The impact significance conclusions of negligible or minor adverse for Norfolk Boreas alone are appropriate.</p> <p>The Applicant did not receive the advice at scoping which the MMO state in their position. However the Applicant have discussed these points with the MMO and it has been agreed that given the findings of the Chapter 8 (APP-221) that sediment would rapidly fall to the seabed and any impacts would small scale and short lived, it was agreed these additional impacts would be negligible.</p>		

Table 5 Agreement Log - Fish and Shellfish Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<ul style="list-style-type: none"> <li>• Damage to gills as a result of erosion of the mucus coating and abrasion of tissue (Redding and Schreck, 1982). The extent of damage depends on size and shape of particles, suspended sediment concentration, water velocity and gill dimensions (Appleby and Scarratt, 1989).</li> <li>• Disruption of gaseous exchange by fine particles which bind with the gill epithelium and clog gill rakers and filaments.</li> <li>• A reduction in feeding and foraging effort by visual predators as a result of increased turbidity (Henley et al., 2000).</li> <li>• An increase in respiration and heart rate (Redding and Schreck,1982)</li> <li>• Smothering of benthic foraging grounds by settlement of sediment.</li> <li>• Smothering of benthic eggs and larvae by settlement of sediment.</li> <li>• Reduced oxygen levels in water due to release of sediments containing high organic matter.</li> <li>• Exposure to contaminants contained within dredged sediment.</li> <li>• Resuspension of sediments resulting from dredging can smother organisms and hinder growth, feeding and survival rates. (Gilmour 1999).</li> <li>• In Section 11.6.1, paragraph 45, the last sentence should include sandeel as an example of fish species which may be underrepresented in the survey results due to the gear types used. Sandeel are considered a key species within the project area.</li> </ul>	

Table 5 Agreement Log - Fish and Shellfish Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>Section 11.7.4.1 (Impact 1), paragraph 113 and 114, relies heavily on the IBTS data to characterise the distribution of sandeel in the region. It should be made clear in this section of the ES that this sampling method is likely to underestimate populations of sandeel as it is not designed to target these species. It is noted that the limitations of the IBTS methodology are acknowledged explicitly in Appendix 11.1, however reiterating this with regards to sandeel would be a useful inclusion in the ES itself.</p> <p>The MMO recognise that the Applicant did not receive the advice stated above at the scoping stage. However the MMO do appreciate that given the findings of the assessment of increased suspended sediment any impact assessment would conclude the impacts to be negligible.</p> <p>(D6) The MMO agree with the ES conclusion that impacts to sandeel resulting from disturbance to habitat and temporary and permanent loss of habitat will be of minor adverse significance. The concern relates to the cumulative impact of minor adverse impacts to sandeel occurring across multiple wind farm sites in the southern North Sea, which is not currently being monitored, this is being discussed through the Benthic Ecology monitoring section and can be agreed.</p>	
	<p>As noted by the MMO, there is an error in relation to the stated temporal worst-case piling duration in hours. The worst case piling duration taken account of in the assessment is 1,167 hours.</p>	<p>Section 11.7.4.3.5, paragraph 201 (ES Chapter 11), states that the temporal worst-case scenario piling would be 49 days (1,2167 hours). Is this an error and should this state "1,167 hours"?</p>	<p>Agreed</p>

Table 5 Agreement Log - Fish and Shellfish Ecology

Topic	Norfolk Boreas Limited position	MMO position	Final position
	As noted by the MMO, paragraph 206 of ES Chapter 11 Fish and Shellfish Ecology (Document reference 6.1.11, APP-224a) refers to the low intensity nursery grounds of plaice.	Section 11.7.4.3.5, paragraph 206 (Chapter 11) closes with an unfinished sentence which is assumed to refer to the low intensity nursery grounds of plaice.	Agreed
	As noted by the MMO, there is a typographical error at paragraph 236 (Section 11.7.4.3.5). The worst case piling duration taken account of in the assessment is 1,167 hours (approx. 49 days).	Section 11.7.4.3.5, paragraph 236 states that the temporal worst-case scenario for the maximum number of piles would be 54 days (1,287 hours); this is not consistent with previous mentions which state 49 days and 1,167 hours.	Agreed
Cumulative Impact Assessment (CIA)	<p>The plans and projects considered within the CIA are appropriate.</p> <p>The CIA methodology is appropriate.</p> <p>The cumulative impact conclusions of negligible or minor significance are appropriate.</p>	<p>The MMO comment in the relevant Representation that:</p> <ul style="list-style-type: none"> <li>The MMO believes the cumulative impact assessment is generally very thorough for fish ecology.</li> </ul> <p>However, the following comment is also made:</p> <ul style="list-style-type: none"> <li>Cumulative effects on sandeel are not considered to be fully addressed and have not considered whether the area will become important for this species as other areas become unavailable. The MMO recommends further information is provided by the Applicant.</li> <li>[In respect to underwater noise] The MMO is content that cumulative impacts on fish and marine mammals have been considered within their respective chapter.</li> </ul> <p>(D6) The MMO agree with the ES conclusion that impacts to sandeel resulting from disturbance to habitat and temporary and permanent loss of habitat will be of minor adverse significance. The concern relates to the</p>	<p>(D6) Agreed</p> <p>With regards to sandeels both parties agree that the lack of detailed information on the spatial distribution and abundance of sandeels at a North Sea wide scale make the assessment of cumulative effects difficult. Both parties agree that the potential contribution of the project to any cumulative impact would be very small.</p>

**Table 5 Agreement Log - Fish and Shellfish Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		cumulative impact of minor adverse impacts to sandeel occurring across multiple wind farm sites in the southern North Sea, which is not currently being monitored, this is being discussed through the monitoring section and can be agreed.	
<b>Mitigation and Management</b>			
Mitigation and Management	Given the impacts of the project, the proposed mitigation outlined in the Schedule of Mitigation (document reference APP-688) and section 11.7.1 of ES Chapter 11 (APP-224) is appropriate.	Agreed	Agreed
Monitoring	<p>The IPMP (APP-703) provides an appropriate framework for agreeing monitoring. No intrusive surveys for fish and shellfish are proposed.</p> <p>(D6) The Applicant agree that where relevant (subject to the survey methods used as part of the benthic monitoring) data could be used to further the understanding of sandeel distribution in the Southern North Sea. Therefore the IPMP was updated at deadline 5 [REPS-031] to include the following text within section 4.4 Fish and Shellfish ecology: <i>“As explained in section 4.3.2, if at the time of completion of the final detailed</i></p>	<p>Where monitoring surveys are undertaken, the gear used in commercial fishing operations for the target species in question should be used.</p> <p>The MMO recommends conducting post-construction sandeel habitat assessments (MarineSpace, 2013) based on the collection of seabed sediment samples for particle size analysis (PSA) to ascertain the continued habitat suitability. This information should be compared with the pre-construction data and post-construction survey years to highlight any changes that have occurred.</p> <p>After further discussion (27<sup>th</sup> November 2019) with the Applicant (27<sup>th</sup> November 2019) the MMO acknowledges the difficulty of undertaking such assessment.</p> <p>The MMO suggests that instead, where relevant (subject to the survey methods used as part of the</p>	Ongoing discussion

**Table 5 Agreement Log - Fish and Shellfish Ecology**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p><i>plans there is good, evidence based justification for increasing the scope of the benthic surveys this will be agreed with the MMO and included within the final plans. If a scope increase for the benthic surveys includes sediment sampling within the windfarm site, the data from that survey could be used to better understand any changes in habitat suitability for sandeels. This methodology for undertaking such a study would be agreed with the MMO though the final plans.”</i></p>	<p>benthic monitoring) data could be used to further the understanding of sand eel distribution in the Southern North Sea. The MMO will continue to discuss the monitoring with the applicant.</p> <p>(D6) The MMO welcomes the update to the IPMP. The MMO is currently in discussion with it’s Scientific Advisors and will provide an update at Deadline 7 on whether this satisfies the MMO to be able to resolve the matter.</p>	



## 2.5 Commercial Fisheries

The project has the potential to impact upon Commercial Fisheries. Chapter 14 of the Norfolk Boreas ES (document reference APP-227) provides an assessment of the significance of these impacts.

Table 6 provides areas of agreement (common ground) and ongoing discussion regarding Commercial Fisheries.

**Table 6 Agreement Log – Commercial Fisheries**

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Environmental Impact Assessment</b>			
Existing Environment	The ES adequately characterises the baseline environment in terms of Commercial Fisheries.	As noted in the relevant representation: The MMO is content that the characterisation of the existing environment is considered comprehensive and accurate in both ES Chapters 11 and 14.	Agreed
Assessment methodology	Appropriate legislation, planning policy and guidance relevant to Benthic and Intertidal Ecology has been used. The Planning statement (document reference 8.1 of the Application, APP-693) provides detail of how the application complies with the East Inshore and Offshore Marine Plans  Further to this, the Applicant submitted a checklist of East Inshore and Offshore Marine Plans Objectives to the Norfolk Boreas Examination at Deadline 1 (REP1-038)	The MMO have reviewed the check list and can now confirm agreement	Agreed
	The list of potential impacts on Commercial Fisheries assessed is appropriate.	Agreed	Agreed
	The worst case scenario used in the assessment for Commercial Fisheries is appropriate.	Agreed	Agreed
Assessment findings	The characterisation of receptor sensitivity is appropriate.	Agreed	Agreed
	The magnitude of effect is correctly identified.	Agreed	Agreed

**Table 6 Agreement Log – Commercial Fisheries**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	The impact significance conclusions of negligible or minor adverse for Norfolk Boreas alone are appropriate.	Agreed	Agreed
Cumulative Impact Assessment (CIA)	The plans and projects considered within the CIA are appropriate.	Agreed	Agreed
	The CIA methodology is appropriate.	Agreed	Agreed
	The cumulative impact conclusions of negligible or minor significance are appropriate.	Agreed	Agreed
<b>Mitigation and Management</b>			
Mitigation and Management	<p>Given the impacts of the project, the proposed mitigation outlined in the Schedule of Mitigation (APP-688) and section 14.7.1 of ES Chapter 14 (APP is appropriate.</p> <p>A Fisheries Liaison and Co-existence Plan (as required under the DCO will provide the framework for agreeing mitigation with relevant fisheries stakeholders. An Outline of this plan has been submitted with the Application (document reference 8.19 of the Application, APP-710) and is secured within the DMLs. Furthermore, as required by the DCO (Condition 14(1)(d) (Schedule 9-10), Condition 9(1)(d) (Schedule 11-12) and Condition 7(1)(d) (Schedule 13), a Fisheries Liaison Officer (FLO) will also be appointed for the construction and operational phases of the project.</p> <p>Where there is likely to be a demonstrable impact on commercial fishing individual agreements will be reached as necessary, with any agreements based on evidence and track record and in accordance</p>	<p>Agreed</p> <p>The MMO would note that the MMO will not act as arbitrator in regard to compensation and will not be involved in discussions on the need for or amount compensation being issued. This needs to be made clear within the Outline Fisheries Liaison and Coexistence Plan.</p>	Agreed

**Table 6 Agreement Log – Commercial Fisheries**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	with Fishing Liaison with Offshore Wind and Wet Renewables (FLOWW) Best Practice Guidance for Offshore Renewables Developments.		
Monitoring	The IPMP (APP-703) provides an appropriate framework for agreeing monitoring. No intrusive surveys for commercial fisheries are proposed. Of specific relevance to commercial fisheries is the monitoring of cable burial which will be undertaken which will be presented in the cable specification, installation and monitoring plan as required under condition 14(1)(g) of the DMLs.	Agreed	Agreed

## 2.6 Marine Mammals

The project has the potential to impact upon Marine Mammals. Chapter 12 of the Norfolk Boreas ES (APP-225) provides an assessment of the significance of these impacts.

The MMO defer to Natural England on most aspects of the marine mammal assessment and therefore this SOCG should be reviewed in parallel with the Natural England SOCG. In accordance with this, the Relevant Representation (30<sup>th</sup> August 2019) submitted by the MMO (RR-069) only comments relevant to marine mammals were related to underwater noise.

Table 7 provides areas of agreement (common ground) and ongoing discussion regarding Marine Mammals.

Minutes of Evidence Plan meetings can be found in Appendix 9.43 and Appendix 28.1 of the Consultation Report (APP-080 and APP-192 respectively).

Table 7 Agreement Log - Marine mammals

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Environmental Impact Assessment</b>			
Existing Environment	The ES uses sufficient data to adequately characterise the baseline environment in terms of marine mammals.	Agreed, the MMO defers to SNCB on all aspects of the marine mammal except when relating to underwater noise.	Agreed
Assessment methodology	Appropriate legislation, planning policy and guidance relevant to marine mammals has been used. The Planning statement (APP-693) provides detail of how the application complies with the East Inshore and Offshore Marine Plans. Further to this, the Applicant submitted a checklist of East Inshore and Offshore Marine Plans Objectives to the Norfolk Boreas Examination at Deadline 1 (REP1-038)	The MMO have reviewed the check list and can now confirm agreement.	Agreed
	The list of potential impacts on marine mammals assessed is appropriate.	The MMO defers to SNCB on all aspects of the marine mammal except when relating to underwater noise.	
	Harbour porpoise, grey seal and harbour seal are the appropriate species of marine mammal to be considered in the impact assessment.	The MMO defers to SNCB on all aspects of the marine mammal except when relating to underwater noise.	
	<p>The approach to underwater noise modelling and assessment of impacts from pile driving noise for marine mammals follows current best practice and is therefore appropriate for this assessment as agreed with the MMO (and Cefas as their advisors) during the expert topic group meeting in March 2018 February 2019.</p> <p>(D6) The following wording is in the SNS SIP that advises that if required further modelling would be undertaken:</p> <p><i>'Based on the final project design, including any required updated underwater noise modelling, an updated assessment</i></p>	It was raised during the pre-application stage that the other (non-piling) construction activities are all continuous sources and source levels have been provided as root mean square (RMS) levels (which is appropriate), as summarised in Table 6-2 and 6-5 of Appendix 5.4. However, the NMFS (2018) noise exposure criteria relevant for impulsive sources (for PTS) have been used, instead of the non-impulsive criteria. The NOAA criteria are also based on the cumulative Sound Exposure Level (SELcum).	(D6) Agreed

Table 7 Agreement Log - Marine mammals

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p><i>will be undertaken if necessary, this will include consideration of in combination effects. ‘</i></p>	<p>The Applicant has responded with the following reply:</p> <p><i>“The impulsive criteria are stricter than the nonpulse. All of the results for the continuous noise using the impulsive criteria are low, less than 500m. Any ranges calculated using the non-pulse criteria will therefore be much smaller than this. Therefore, new modelling using the non-pulse criteria would not add anything further to the assessment”.</i></p> <p>It is correct that the impulsive criteria are stricter than the continuous noise criteria, and in this sense is precautionary. However, the MMO note that using a simple modelling approach can only give a rough estimation of the potential effects. Further, details of the model have not been disclosed (i.e. the scaling factor is unknown). Thus, it is difficult to ascertain whether the actual modelling itself is precautionary. Whilst it is unlikely than an animal will remain close to the source for the full 24-hour period, it cannot be guaranteed and the MMO comments that further information regarding the modelling methodologies of potential impacts is useful for increasing confidence in assumptions.</p> <p>(D6) The MMO requested further PLOT and broadband level clarification and can now agree this point on the basis that further monitoring can be secured through the SNS SIP if required.</p>	

Table 7 Agreement Log - Marine mammals

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>Noise sources for difference construction activities (other than piling) used in Appendix 5.4 of the ES (APP – 550) are appropriate</p>	<p>The MMO notes that one comment has not been fully addressed. Table 6.2 in Appendix 5.4 summarises the estimated unweighted source levels for the different construction noise sources considered, which are based on various datasets. As part of the pre-application stage the MMO previously requested that the references be provided for these datasets.</p> <p>The Applicant has responded with the following reply:</p> <p><i>“the datasets used to estimate the unweighted source levels are not formally published, and so cannot be directly referenced. This data was included due to the lack of available published data and the limited nature of that which is available. It should be noted that data from hundreds of datasets have been built into the model and it doesn’t refer explicitly to any of them, they only identify trends. In addition, because of confidentiality it is not possible to specifically reference any other projects” (see Table 12.4 of Chapter 12 Marine Mammals)”.</i></p> <p>As stated in the Relevant Representation (RR-069) The MMO, on this occasion only, is content with the clarification, although we would usually expect to see some citation or reference of the datasets used to estimate these source levels, even if they are not formally published.</p>	<p>Agreed</p>
	<p>The impact assessment methodology is appropriate.</p>	<p>The MMO defers to SNCB on all aspects of the marine mammal except when relating to underwater noise.</p>	



**Table 7 Agreement Log - Marine mammals**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	The worst case scenario used in the assessment for marine mammals is appropriate.	The MMO defers to SNCB on all aspects of the marine mammal except when relating to underwater noise.	
Assessment findings	The characterisation of receptor sensitivity, magnitude of impacts and significance of impacts for the Norfolk Boreas project alone are appropriate.	The MMO defers to SNCB on all aspects of the marine mammal except when relating to underwater noise.	
	The findings of the noise assessment (APP-550) are appropriate and are correctly interpreted within the marine mammal assessment (APP-225)	As noted in its Relevant Representation: The MMO is content that underwater noise has been considered in terms of the potential impacts on receptors. Four separate impacts concerning underwater noise have been considered: (i) noise from piling; (ii) noise from other (non-piling) construction activities; (iii) noise from UXO and (iv) noise during operation. Underwater noise associated with decommissioning activities has also been considered.	Agreed
Cumulative Impact Assessment (CIA)	The CIA methodology is appropriate. Including the plans and projects considered and the conclusions of negligible or minor significance.	<p>The MMO would defer to Natural England for general comments on the CIA however the MMO made the following comment in the relevant representation:</p> <ul style="list-style-type: none"> <li>The MMO is content that cumulative impacts on fish and marine mammals have been considered within their respective chapter. The Cumulative Impact Assessment determines the potential for disturbance to marine mammals from underwater noise sources during the offshore construction, operation, maintenance and decommissioning of Norfolk Boreas, on the basis that appropriate mitigation will be put in place to reduce the risk of (Permanent Threshold Shift PTS).</li> </ul>	Agreed

**Table 7 Agreement Log - Marine mammals**

Topic	Norfolk Boreas Limited position	MMO position	Final position
<b>Habitats Regulations Assessment (HRA)</b>			
Screening of LSE	<p>The Approach to HRA Screening is appropriate. The following sites are screened in for further assessment:</p> <ul style="list-style-type: none"> <li>• Southern North Sea SAC</li> <li>• Klaverbank SAC</li> <li>• Noordzeekustzone SAC</li> <li>• Humber Estuary SAC</li> <li>• The Wash and North Norfolk Coast SAC</li> <li>• Winterton-Horsey Dunes SAC</li> </ul>	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	
Assessment of Adverse Effect on Integrity	The approach to the assessment of adverse effect on site integrity is appropriate. And the conclusions of the Information to Support HRA report are appropriate.	MMO defers to the opinion of the Statutory Nature Conservation Bodies (SNCBs) for conservation advice.	
<b>Mitigation and Management</b>			
Mitigation and Management	<p>The Site Integrity Plan (SIP) (required under DCO), in accordance with the In Principle SIP (APP-708), provides an appropriate framework for the management of effects on the Southern North Sea (SNS) SAC.</p> <p>The DCO conditions ensure that any piling activities must not commence until the MMO is satisfied that the SIP provides such mitigation as is necessary to avoid adversely affecting the integrity (within the meaning of the 2017 Regulations) of the SNS SAC.</p> <p>The In Principle SIP provides a summary of potential effects on the SNS SAC, for Norfolk Boreas alone and in-combination. This will be refined as the project design develops.</p> <p>The In Principle SIP also outlines the measures currently available or likely to be available in the future, which could be applicable to mitigate underwater noise effects associated with Norfolk Boreas. The format of the In Principle SIP</p>	As noted in its Relevant Representation (30th August 2019): The MMO supports the proposal set out in the In Principle Norfolk Boreas SNS SAC SIP, management measures will be confirmed that could 'ensure no adverse effect beyond reasonable scientific doubt' on the SNS SAC for the significant disturbance of harbour porpoise based on the final design of Norfolk Boreas.	Agreed

**Table 7 Agreement Log - Marine mammals**

Topic	Norfolk Boreas Limited position	MMO position	Final position
	<p>followings that accepted, as key mitigation provision, on other recent DCO consent application for SNS wind farms.</p>		
	<p>The draft Marine Mammal Mitigation Protocol (MMMP) for piling (application document 8.13) provides an appropriate framework to secure appropriate mitigation measures for underwater noise impacts on marine mammals.</p>	<p>The MMO made the following comments in its Relevant Representation (30<sup>th</sup> August 2019):</p> <ul style="list-style-type: none"> <li>• The MMO notes the mitigation is mostly concerning marine mammals. Based on the information provided at this stage (and without knowing what the final mitigation measures will entail), the MMO believes the draft proposals for marine mammal mitigation seem reasonable and in line with other developments.</li> <li>• A draft MMMP for piling has been submitted (no specific measures have been agreed at this stage). The final MMMP will be approved by the MMO prior to construction. The MMMP will mostly likely involve the following measures:               <ul style="list-style-type: none"> <li>○ The establishment of a mitigation zone around the pile location before each pile driving activity, based on the maximum predicted distance for PTS. The methods for achieving the mitigation zone would</li> </ul> </li> </ul>	<p>Agreed</p>

**Table 7 Agreement Log - Marine mammals**

Topic	Norfolk Boreas Limited position	MMO position	Final position
		<p>be agreed in consultation with Natural England and secured as commitments in the final MMMP.</p> <ul style="list-style-type: none"> <li>o A soft start and ramp up would be conducted for a minimum of 30 minutes. In the event that piling activity is stopped for more than 10 minutes, Norfolk Boreas Limited would ensure that the soft start and ramp-up procedure is conducted prior to piling re-commencing.</li> </ul> <p>The agreed MMMP is secured in condition 14 (1) (f) of the DMLs.</p>	
	<p>Unexploded Ordnance (UXO) clearance is considered in the EIA but is not included in the DCO or consented under the DMLs. If these activities will be required, they would be subject to additional licensing requirements once the nature and extent of UXO present is known following pre-construction surveys. A specific UXO MMMP would be submitted to MMO in support of such an application.</p>	<p>As noted in its Relevant Representation (30th August 2019): The MMO notes that Unexploded Ordnance (UXO) activities are not part of the application but have been assessed within the ES. A Marine Mammal Mitigation Protocol (MMMP) for UXO clearance would be developed in line with a separate marine licence application in the pre-construction period prior to any UXO clearance activities, once there is more detailed information on the activities required for Norfolk Boreas. The UXO clearance MMMP will take account of the most suitable mitigation measures, based upon best available information and methodologies at that time and in consultation with the relevant (SNCBs and the MMO (see point 3 of the draft MMMP). The MMO supports this proposal.</p>	Agreed
Monitoring	<p>The IPMP (APP-703), provides an appropriate framework to agree monitoring requirements with the MMO.</p>	<p>Agreed The MMO notes that the MMMP will include monitoring where appropriate, and expect that further details will be provided in due course.</p>	Agreed

## **2.7 Offshore Ornithology**

The MMO defer to Natural England on matters associated with offshore ornithology and were not involved in the Expert Topic Group meetings for this topic.

Please see the Natural England (Offshore Ornithology) SOCG for further information.

## **2.8 Offshore Archaeology**

The MMO defer to Historic England on matters associated with offshore archaeology and were not involved in the Expert Topic Group meetings for this topic.

Please see the Historic England SOCG for further information.

## **2.9 DCO and Deemed Marine Licence and other DCO documents**

Table 1 provides an overview of meetings and correspondence undertaken with the MMO regarding the DCO and DMLs.

The MMO's relevant representation includes comments on the draft DCO which are detailed in Table 8 along with the Applicant's response.

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
<b>Environmental Impact Assessment</b>			
DML structure	<p>The Application contains five DMLs consisting of two for the generation assets, two for the transmission assets and one project interconnector assets. This is to facilitate the two different scenarios, a phased development and ensure smooth transitions during the transfer of benefit. If a transfer of benefit were to happen, it is unclear what mechanisms would be in place to ensure two different windfarms developers working in the same area work in cooperation especially with regard to in-combination effects. This is considered a potential risk to the project by the MMO. The MMO wishes for the inclusion of a cooperation condition within the Schedule 1, Part 3, Requirements with the following wording:</p> <p><i>Offshore co-operation</i></p> <p><i>(1) Before submitting the pre-construction plans and documentation required to be submitted to the MMO for approval under Schedule 9 and 10, Condition 14 and respective conditions within Schedule 11-13, the undertaker in respect of the relevant licence must provide a copy of the plans and documentation to the other undertaker under this Order.</i></p> <p><i>(2) The other undertaker must provide any comments on the plans and documentation to the first undertaker within 14 days of receipt.</i></p> <p><i>(3) Each undertaker must participate in liaison meetings with the other undertaker as requested from time to time by the MMO in writing in advance; and the meetings must be chaired by the MMO and must consider such matters as are determined by the MMO relating to the efficient operation of a deemed marine licence where it has an impact on the efficient operation of any other deemed marine licence.</i></p>	<p>In this context it should be noted that the Applicant has included a mechanism to govern co-operation between Norfolk Vanguard and Norfolk Boreas in respect of the offshore areas of overlap (Condition 18 (Schedule 11-12) and Condition 15 (Schedule 13)). This provides that Norfolk Boreas must send relevant schemes, plans, documents, and/or protocols to the Norfolk Vanguard offshore undertaker prior to submitting them to the MMO for approval, in order to allow Norfolk Vanguard the opportunity to comment on the documents. Norfolk Boreas must also participate in liaison meetings with the undertaker of the offshore element of the Norfolk Vanguard Offshore Wind Farm as requested from time to time by the MMO. These meetings may consider such matters as are determined by the MMO relating to the efficient operation of the offshore element of both of the authorised projects.</p> <p>In relation to any transfer of benefit pursuant to Article 6, the general position is the same as that which would apply under any other offshore wind scheme. As with previous offshore wind schemes of this nature, including the East Anglia One Limited and East Anglia Three Limited projects, the cooperation between a transferee and transferor following any transfer of benefit is governed through a private commercial agreement. This type of agreement will apportion the obligations and liabilities between each respective party. A cooperation agreement would be entered into between the respective parties in the event that Norfolk Boreas Limited transferred part of the benefit of the Order to another entity. This, rather than a Requirement or condition in the DCO, provides a more comprehensive avenue to govern the relationship and cooperation between the parties. In the event of any Transfer of Benefit, the Applicant will therefore carefully apportion liability and responsibility for the respective marine area and the associated plans, schemes and protocols.</p>	Agreed

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>The MMO is content with the response provided by the Applicant and can confirm agreement</p>	<p>Pursuant to Article 6(14), the MMO will be provided with notice stating: the name and contact details of the transferee, the date on which the transfer will take effect, the exact provisions to be transferred or granted together with the restrictions, liabilities and obligations that will apply to the person/entity exercising the powers transferred, a plan showing the works or areas affected, and a copy of the document effecting the transfer.</p> <p>The MMO will therefore be provided with sufficient documentation to enable the MMO to comply with its statutory duties in relation to monitoring and enforcement.</p> <p>The Applicant therefore considers that this approach is not materially different from previously consented schemes and, accordingly, the Applicant does not consider it necessary to change the DCO in this respect.</p>	
Underwater Noise	<p>As noted in the Relevant Representation (RR-069) the MMO have a concern in relation to underwater noise. The MMO requires a condition is added to the DMLs to prevent concurrent piling within the project and between Norfolk Boreas and Norfolk Vanguard.</p> <p>The MMO are in agreement in principle that the development and management of the SNS SAC SIP and MMMP (both within and without designates sites) is where, if required, any issue of concurrent piling within the project and between Norfolk Boreas and Norfolk Vanguard and the number of piles to be installed in a 24 hour period can be assessed further to determine, if any restrictions or mitigation is required.</p>	<p>The Applicant does not consider it to be appropriate to have a condition within its DCO that relates to another project. Norfolk Boreas has assessed for up to two concurrent piling events within the Norfolk Boreas project and therefore the DCO application is for up to two piling events to occur concurrently. The commitment to the SNS SIP will ensure that adequate mitigation will be put in place and developing the SNS SIP pre-construction will ensure that this is based on the latest scientific evidence, information and requirements. Within the current In Principle SNS SIP the Applicant considers Scheduling of pile driving with other projects as a potential mitigation measure and as required under Condition 14(1)(m) of Schedules 9 and 10 of the DCO the MMO are required to be satisfied that the SNS SIP provides adequate mitigation as is necessary to avoid adversely affecting the integrity of the Southern North Sea SAC. If required, and to the extent that the MMO did not consider the mitigation measures in the SNS SIP to be sufficient, an agreement not to pile drive at the same time as Norfolk Vanguard</p>	(D6) Agreed

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>(D6) The MMO is content that the following wording within the SNS SIP and can agree this point:</p> <p><i>Based on the final project design, including any required updated underwater noise modelling, an updated assessment will be undertaken if necessary, this will include consideration of in combination effects.</i></p>	<p>could be included in the final SNS SIP, to be agreed with (and approved by) the MMO.</p> <p>The responsibility to define the management framework and potential methodologies for management of multiple projects piling at the same time is largely outside of the Applicant's control; this responsibility lies with the regulator (MMO) to ensure no adverse effect on the integrity of the Southern North Sea SAC.</p>	
Timeframes	<p>Timescales - Part 4, Condition 14 (1) (b) and Condition 15 (3) refer to a timescale of four months to submit documentation.</p> <p>14.—(1)...</p> <p>...(b) A construction programme and monitoring plan (which accords with the offshore in principle monitoring plan) to include details of—</p> <p>(i) the proposed construction start date;</p> <p>(ii) proposed timings for mobilisation of plant delivery of materials and installation works;</p> <p>(iii) proposed pre-construction surveys, baseline report format and content, construction monitoring, post-construction surveys and monitoring and related reporting in accordance with sub-paragraph (1)(h) and conditions 17, 18, 19 and 20; and</p> <p>(iv) an indicative written construction programme for all wind turbine generators offshore service platform, meteorological masts, measurement buoys and cables (including fibre optic cables) comprised in the works in Part 3 (licensed marine activities) of this Schedule (insofar as not shown in paragraph (ii) above);</p> <p>with details pursuant to paragraph (iii) above to be submitted to the MMO in accordance with the following—</p>	<p>The Applicant notes the MMO's comments. The Applicant, however, considers that the four month time frame conditioned within the DMLs is appropriate and proportionate to allow the MMO, in consultation with statutory bodies, sufficient time for stakeholder consultation and the provision of comments, whilst ensuring no unnecessary delay to the commencement of development and completion of construction works.</p> <p>This time period is contained on a number of other Offshore Wind Farm (OWF) DCOs (including The East Anglia Three Offshore Wind Farm Order 2017, the Hornsea Two Offshore Wind Farm Order 2016, the draft Norfolk Vanguard Offshore Wind Farm Order [2019], and the draft Hornsea Project Three Offshore Wind Farm Order [2020]). Four months is, therefore, well-established as an appropriate time frame for OWF schemes of this nature and one that ensures a balance is struck between the expedient discharge of the relevant conditions attached to the DML whilst allowing a reasonable period of time for consideration by the MMO and its consultees.</p> <p>The Applicant acknowledges that it has, in some recent cases, taken much longer than 4 months for the MMO to discharge certain DML conditions on other OWF projects and it should be recognised that with no mechanism to encourage the MMO to determine</p>	Ongoing discussion



**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p> <i>(aa) at least four months prior to the first survey, detail of the pre-construction surveys and an outline of all proposed pre-construction monitoring;</i>  <i>(bb) at least four months prior to construction, detail on construction monitoring;</i>  <i>(cc) at least four months prior to commissioning, detail of post-construction (and operational) monitoring; unless otherwise agreed in writing with the MMO. ...</i>  <i>15.—...(3) Each programme, statement, plan, protocol or scheme required to be approved under condition 14 must be submitted for approval at least four months prior to the intended commencement of licensed activities, except where otherwise stated or unless otherwise agreed in writing by the MMO. ...</i>            The MMO have concerns that this is not enough time to fully assess and review documents and request this is changed to six months.             The four month timescale was deemed appropriate for round 1 developments, which were smaller, closer to shore and with fewer complex environmental concerns. The documents in question require in depth analysis by both MMO staff and statutory consultees. There needs to be as much time as practically possible to allow this process to take place.            Further justification is provided in the Relevant Representation Points (2.1.4 to 2.1.20)             Conditions 14 (1) and 15 (3) set out the requirements for the Applicant to submit all preconstruction documentation at least four months prior to the commencement of the construction works. The MMO does not agree that a four month timescale provides sufficient time for the post consent documentation to be considered prior to the start of commencement of works. The MMO believes that a         </p>	<p>           applications within a reasonable period (such as arbitration or appeal) the developer is then left in a position which is wholly unsatisfactory. With such highly competitive and fixed Contracts for Difference milestones, and where offshore construction can only be undertaken in safe and optimal weather conditions, wind farm developers need the certainty and confidence of a reliable and consistent approval process. This is also one of the reasons why the Applicant sought to insert an appeal provision within the dDCO. In this context, the Applicant refers the MMO to its response below and the Norfolk Vanguard Ltd and MMO Joint Position Statement (Appendix 3 of the Applicant's Comments on Relevant Representations document).             Accordingly, there is a strong public interest argument in favour of timely approvals in order to ensure that Nationally Significant (renewable energy) Infrastructure Projects are not unduly delayed. Accordingly, the Applicant considers that the dDCO strikes the balance between allowing the MMO (and its advisers) to properly discharge their statutory duties whilst ensuring renewable energy development is unlocked in a timely manner.             In addition, in response to the MMO's comment at paragraph 2.1.6 that it is very common for documents to require multiple rounds of consultation to address stakeholder concerns, the Applicant envisages that discussions will be held with the MMO, and its stakeholders (where relevant), once the final Project design has been agreed and in advance of seeking formal discharge of conditions. This dialogue, which is also in the Applicant's own interest, would reduce the need for multiple rounds of consultation post-plan-submission. The In Principle SIP (document reference 8.17), for example, contains an indicative timeline for consultation and agreement of the SIP post-consent; this includes several rounds of consultation with the MMO prior to the formal submission of the final SIP. It is expected that other key plans would follow a similar         </p>	

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>four month pre-construction submission date is unrealistic and even counterproductive, as the pre-construction sign-off process is not always straight forward.</p> <p>From experience, it is very common that documents require multiple rounds of consultation to address stakeholder concerns. This process alone can be very time consuming and the proposed four month submission time would not account for the additional time that the Applicant may require to update documents throughout the process. The MMO notes that some documents require additional assessment processes, for example the Southern North Sea (SNS) SIP may require post consent Habitats Regulations Assessment (HRA) considerations to be made. In many cases the Applicant could be working towards a very tight time schedule post consent, and a delay in document sign off could lead to project delays, significant cost implications and frustration when not enough time has been committed for this process.</p> <p>For example, the time scale of one in depth plan (such as SNS SIP) could potentially follow this path:</p> <ul style="list-style-type: none"> <li>• 4 weeks to acknowledge and review the document within the MMO</li> <li>• External consultation of this documentation could take up to 6 weeks</li> <li>• Once consultation is closed the MMO has to review the response and possibly ask for additional information from the Applicant. At this stage the MMO and the Applicant would be in discussion to agree on an approach to the responses. This could be for up to 4 weeks</li> <li>• The MMO could then request further information from the Applicant, which dependent on the level of</li> </ul>	<p>consultation and approval process. Furthermore, it will be in the Applicant's interest to engage the MMO, and relevant stakeholders, at an early stage in this way to ensure the discharge process is as efficient as possible. In practice, the Applicant will have engaged in consultation activities with the MMO, and relevant stakeholders, well in advance of submission of the final version for approval; this means that the relevant stakeholders should be very familiar with its terms and effect at the point an application for discharge is made. By extension, the standard and level of detail within the final plan is expected to be of a high-quality.</p> <p>The Applicant agrees that any delays in document sign-off could lead to project delays and significant cost implications. Accordingly, in view of the tight construction programmes coupled with the time and investment that the Applicant will have committed to pre-submission consultation, the Applicant considers that there needs to be a consistent time frame (set at four months) for discharge in accordance with previous projects - including other Round 3 projects of a similar scale, together with a transparent appeals process in the event of refusal or non-determination.</p> <p>In view of the above, the Applicant does not consider it necessary or appropriate to adjust the time periods for discharge within the DML conditions.</p>	

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>detail, could represent a further significant time period of for example 4 further weeks Once this is returned by the Applicant, the MMO would begin the consultation process again.</p> <p>It is noted from the above that, even if discharge documentation were to follow the current timescales, and no further communication was required from the Applicant (which is highly unlikely) the current turnaround equates to 18 weeks, which is longer than the 16 weeks suggested by the Applicant. It should also be noted that the above timescale applies to only one relatively small document, when in reality, the number of in-depth discharge requirements could far exceed 30 in total.</p> <p>The MMO recognises that the 4 month timing could be changed with written agreement of the MMO. The MMO notes that the condition implies this is for the Applicant to request and the MMO to agree. It is far more likely that the Applicant will ask the MMO to reduce timescale for certain documents, as has been the MMO's experience thus far. Additionally, it is unlikely that the Applicant would agree to a change later in the day as their construction schedule will be set and delays of up to two months to those schedules would have significantly excessive cost implications.</p> <p>The MMO considers it is important to note the actual practicalities of these kinds of sign-off as well as the wording within the consent. If the works are submitted at 4 months prior to the construction start date then by this point the Applicant already has contracts with vessels, and the construction and transport of components will be underway. If there are delays then the Applicant will face significant costs from vessels sitting idle and the potential</p>		

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>need to resource storage areas for wind farm infrastructure components that should have been installed. It is therefore very likely that the Applicant will apply all pressure it can on the MMO and its consultees to adhere to a faster timeframe. This often leads to resource being drawn from other areas in order to try and facilitate a quicker turn around. By giving the MMO and its consultees 6 months there is more time to reach a conclusion, and less risk of any need for extension or delay.</p> <p>Part 4, Condition 15(5), includes a timescale to discharge documentation.          15.—...(3) Unless otherwise agreed in writing with the undertaker, the MMO must use reasonable endeavours to determine an application for approval made under condition 14 as soon as practicable and in any event, within a period of four months commencing on the date the application is received by the MMO.</p> <p>The MMO considers it inappropriate to put a timeframe on decisions of such a nature. A Deemed Marine Licence should be treated equal to a marine licence and the conditions imposed should be equivalent to those that would be granted on a marine licence. The MMO would not willingly seek to constrain our ability to make an appropriate decision on post consent sign-off of plans and documentation, we would never include such a restriction on any other consent.</p> <p>The MMO has concerns regarding the complexity of documentation and the need for these timeframes to be longer, indicating that there is likely to be insufficient time to consider all the relevant issues and seek appropriate feedback from statutory bodies. With such tight</p>		

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>restrictions, if the MMO is not confident that all concerns have been dealt with a refusal of the application for discharge is more likely. This would increase the risk to the development because if these works were not granted discharge, the undertaker would have to provide updated documentation which would restart the process and potentially cause unnecessary delay.</p> <p>The discharge documentation covers a wide range of mitigation that should be applied due to significant environmental and navigational safety risks. This documentation can be highly technical and require full expert analysis to assist in mitigating against such risk. Any imposed time limits which could result in expert consultation being rushed to meet the suggested agreed timescales are considered as a fettering of the MMO's authority to effectively discharge licence conditions under the requirements of the Marine and Coastal Access Act 2009 (MCAA).</p> <p>The MMO is currently as flexible as possible with Applicants in the signing off of required documentation. Flexibility is born from the fact that the remit is to enable sustainable development within our seas without obstruction. An adoption of more rigid timescales necessarily reduces this flexibility and restrictive timetabling may create an increased risk of non-compliance with submission deadlines of conditions and accompanying enforcement action. Complications may also occur when discharge documentation requires late changes or a phased approach closer to construction.</p> <p>The MMO has the legal capacity to undertake enforcement action in such an event unless the extensions have been agreed beforehand in writing. The MMO always seeks to</p>		

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>be an enabling regulator and would prefer utilising flexibility in meeting unforeseen complications and enable sustainable development.</p> <p>The MMO understands that the Applicant wants to ensure there is a specific time scale by which a decision is made, and that the decision does not continue without resolution. The MMO understands that this is due to the potential impact of delays, whether they be of a commercial or scheduling nature to the Applicant.</p> <p>The MMO is a government body assigned powers and responsibilities by parliament to make these decisions and within that responsibility is a requirement to be reasonable. The MMO has always been willing to work with both the Applicants and our stakeholders to achieve a resolution to a timetable that is appropriate for all parties. The MMO would never seek to delay making a decision unless there were significant concerns and issues to be addressed. The MMO will always make best endeavours to sign off all documentation in time for the proposed start date.</p> <p>If all wind farms going forward are requesting the rigid timescales for response the flexibility raised earlier would be limited as the MMO would prioritise through the timescales rather than turning round discharge of conditions in reduced timescales due to the Applicant's last minute changes. The MMO would highlight that there is a danger that requests for shorter turnarounds of discharge of conditions would not be agreed. This could provide difficulties for the Applicant.</p>		

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>The MMO’s position remains that condition 15 (5) should be removed from the DML, notwithstanding this the MMO understands the need for definitive timescales and suggest that the MMO would be willing to move away from the previously successful, flexible approach, and could agree to a timescale of 6 months for submission of all discharge documents.</p>		
<p>Arbitration and Appeals</p>	<p>"The MMO and Norfolk Vanguard Limited were in discussions in relation to arbitration, timescales and appeals processes, during the Norfolk Vanguard Examination process. The evolution of these discussions was put forward in a final joint position statement at deadline 9 between MMO and Norfolk Vanguard Applicant for the Secretary of State (SoS) to make a decision on the inclusions. This document is attached [to the MMO's Relevant Representation] as Norfolk Vanguard Ltd and MMO Joint Position Statement - Arbitration and Appeal Mechanisms. Our position remains the same regarding outstanding areas of agreement.</p> <p>1.1.2 The MMO understands that arbitration does not apply to the MMO in this application.</p> <p>1.1.3 The MMO understands the Applicant will update the DCO/DMLs as per the outcome of Norfolk Vanguard consenting process."</p> <p>The MMO does not agree with the insertion of Part 5 of Schedules 9-13. This section proposes changes to the Marine Licensing (Licence Application Appeals) Regulations 2011 (Appeal Regulations). The MMO has major concerns with this approach highlighted in comments 2.1.22 to 2.1.32.</p>	<p>The Applicant notes the MMO's comments.</p> <p>The Applicant's position remains the same as that put forward during the Norfolk Vanguard examination and through the joint position statement with the MMO (Appendix 3 of the Applicant's Comments on Relevant Representations). In short, given that the MMO's position is that arbitration should not apply to the MMO, the Applicant considers that there should be a pragmatic alternative for resolving disputes and/or non-determinations under the DMLs; judicial review is, in the Applicant's view, not a suitable avenue for determining a dispute or non-determination under a DML related to a Nationally Significant (offshore wind) Infrastructure Project. The Applicant proposes that the MMO would instead be subject to an appeal process similar to the Marine Licensing (Licence Application Appeals) Regulations 2011, which would apply to any refusal or non-determination under the DMLs in Schedule 9-13.</p> <p>The Applicant can confirm that the MMO's understanding is correct in that the MMO are excluded from arbitration in the draft DCO, on the basis that an the appeals process is included in Part 5 of the DMLs, as set out in the current draft of the DCO.</p> <p>The Applicant considers that the decision from the Secretary of State on the Norfolk Vanguard DCO will also be a useful indication of the direction of travel for arbitration and the appeals process The</p>	<p>Ongoing discussion</p>



**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>The MMO is subject to an appeals process in respect of specific aspects of marine licences granted under Part 4 MCAA Section 73 which provides an appeals process for Applicants of marine licences through the Appeals Regulations. This appeals process is for an Applicant to appeal a refusal of a marine licence or the inclusion of conditions within a licence.</p> <p>The MMO is aware that the Applicant wants some form of mechanism to be available to appeal in the event that the MMO either fails to make a determination within the time period set out in the DCO or to a decision to refuse to approve the documentation, this is already available to the Applicant in the form of an escalated internal procedure and judicial review (JR) and therefore including any appeal mechanism in the order is simply unnecessary.</p> <p>The MMO believes this amendment to the appeals process constitutes a misunderstanding of when the appeal regulations applies. The 2011 regulations apply a statutory appeals process to the decisions the MMO takes regarding whether to grant or refuse a licence or conditions which are to be applied to the licence. However they do not include an appeals process to any decisions the MMO is required to give in response to an application to discharge any conditions of a marine licence issued directly by us. Therefore, if the DCO were to be granted with the proposed appeals process included, this would not be an appeal procedure broadly consistent with existing statutory processes. This amendment would be introducing and making available to this specific Applicant a new enhanced appeals process which is not available to other marine licence holders.</p>	<p>Applicant refers to the joint position statement with Norfolk Vanguard Limited (Appendix 3 of the Applicant's Comments on Relevant Representations document).</p> <p>In addition, by way of further background, following Model Article 42, previous DCOs have applied the concept of arbitration to the MMO and relevant consultees. However, such arbitration mechanisms based on the model provision did not contain any structure, timings or outcomes so as to provide the detail of how the arbitration process would operate. The Norfolk Vanguard Limited applicant (together with the applicants of Hornsea Project Three and Thanet Extension Offshore Wind Farms) therefore inserted more detail on the timeframes and steps associated with the arbitration process. To this end, the MMO (and its consultees including Trinity House) made submissions that the arbitration Article (and related schedule) should not apply to the MMO, and to determination of any matter under the DMLs in particular.</p> <p>The MMO are subject to an appeals process in respect of Marine Licences granted under Part 4 of the Marine and Coastal Access Act 2009 (MCAA 2009). Section 73 of the MCAA provides an appeals process for applicants of Marine Licences by way of the Marine Licensing (Licence Application Appeals) Regulations 2011 (the Appeal Regulations). However, the Applicant agrees with the MMO, that the appeals process does not apply to any non-determination or refusal to approve conditions under a Marine Licence (or a DML) and, under Regulation 4 of the Appeal Regulations, is limited to appeals concerning:</p> <ul style="list-style-type: none"> <li>(1) the grant of a marine licence subject to conditions;</li> <li>(2) the refusal to grant a marine licence;</li> <li>(3) the time period for which activities are authorised; and/or</li> </ul>	



Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>This is problematic because it would lead to a clear disparity between those licence holders who obtained their marine licence directly from the MMO and those who obtained their marine licence via the DCO process. This would lead to an inconsistent playing field across the regulated community. Had parliament intended the appeal process to extend to these decisions to these decisions, whether in relation to NSIPs or the marine licence granted directly by the MMO, then the wording of the Appeal Regulations would have been drafted differently.</p> <p>In addition, the effect of the proposed change, in this case, would be to replace the review of the MMO decision making on conventional public law grounds (via the process of JR) (for discharge of conditions under an expressly granted licence) with a merits review by the Secretary of State. This is a fundamental departure from what Parliament intended, and the MMO can see no justification whatsoever for such a fundamental change particularly where the purpose of the deemed licence regime under the Planning Act 2008 is to essentially to remove the need for a separate application for a licence alongside or following the making of the Order and not to fundamentally change the regulatory regime that applies.</p> <p>The MMO notes that the Planning Act 2008 which set out the regime for DCOs does not have any 'statutory' appeals process either It works on the basis that the Applicant and those with an interest in the application work with the ExA to agree the terms of the order but it is for the SoS ultimately to decide on the terms of the order. The way to appeal against the decisions of the SoS to grant the order as made, or refuse the order, is provided for in the Act is</p>	<p>(4) the applicability of the licence conditions to transferees.</p> <p>Accordingly, if any determination under the DMLs is excluded from arbitration and/or an appeals process then the only recourse to an undertaker is to seek judicial review of a decision made by the MMO. However, it is noted that in order to seek judicial review there must first be a decision by the MMO. To the extent that there has been no determination in relation to approval requested under a condition, this places the undertaker in a state of limbo where it has no remedy to move matters forward. Even if a decision has been made to refuse approval of a condition, which is therefore capable of judicial review, this is not an adequate remedy. The court would not be able to consider the merits of the determination, and to the extent that the decision had not lawfully been made, the remedy would be only to remit the decision back to the MMO for its re-determination.</p> <p>In relation to deemed refusal, the Applicant does not consider this to be a fair or transparent mechanism for determining an application. As the MMO recognise, the emphasis of the MMO's duties lie in the fact that Parliament has vested public law functions such as discharging marine licence conditions upon the MMO. It should therefore naturally follow that the MMO does indeed reach a decision on the discharge of a condition, with justifiable reasons (for approval or disapproval), within the timeframes stipulated in a (deemed) marine licence. The MMO has a public duty to do so. This is increasingly pressing in the case of offshore wind. There is a strong public interest argument in favour of timely approvals in order to ensure that nationally significant (renewable energy) infrastructure projects are not unduly delayed. Accordingly, the Applicant considers that the appeal mechanism inserted within the dDCO strikes the balance between allowing the MMO (and its consultees)</p>	

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>via the JR process and not by way of an appeal to PINS or to a tribunal.</p> <p>The MMO requests the removal of the appeals process stipulated in Part 5 of the DML as the MMO considers it is wholly inappropriate for the DCO to replace the existing appeals process (JR) with a modified version of the appeals route set out in the 2011 regulations for the reasons already set out above.</p> <p>The MMO would like to highlight that there is a current mechanism available to the Applicant should the MMO fail to make a determination within what the Applicant considers to be a reasonable timescale. The Applicant would write to the MMO explaining this and requiring the MMO to make a determination by a specific date. Should the MMO fail to make the decision then the Applicant would be able to judicially review that failure to make a decision. If the MMO were to make the determination, but decided to refuse to approve the documents, then again the Applicant would be able to challenge that refusal via JR. This provides certainty, and the Applicant can already be confident of a reliable and consistent approval process.</p> <p>In addition to comment 2.1.18 the MMO could agree to a timescale of 6 months for submission of all discharge documents with the addition of an automatic deemed refusal caveat, rather than an appeals process, should a decision not have been made within this period. This mirrors other planning and environmental licence legislation.</p> <p>The planning permissions under the Town and County Planning Act 1998 and associated regulations, the Local</p>	<p>to properly discharge their statutory duties whilst ensuring development is unlocked in a timely manner.</p> <p>In response to the MMO's concerns that the Planning Act 2008 does not allow for such an approach, the Applicant draws the MMO's attention to section 120 of the Planning Act 2008, which provides that a Development Consent Orders may:</p> <ul style="list-style-type: none"> <li>(a) apply, modify or exclude statutory provisions;</li> <li>(b) amend, repeal or revoke statutory provisions of local application; and</li> <li>(c) include any provision that appears to the Secretary of State to be necessary or expedient for giving full effect to any other provision of the order.</li> </ul> <p>The draft DCO is drafted as a Statutory Instrument, which itself involves in-depth consultation and scrutiny from stakeholders, and already seeks to modify and dis-apply certain statutory provisions, as set out at article 7, article 23, and Schedule 7 of the dDCO. To the extent that this is a concern, additional drafting could be included in the dDCO at article 7 to apply the modified 2011 Regulations (as set out in Part 5 of the DMLs) or a bespoke appeals process could be used, such that the 2011 Regulations are not modified. In any event, including an appeal mechanism for the DMLs within the dDCO does not alter the Marine Licensing process, or the way that decisions are determined under that process. The MMO's stakeholders have no legitimate expectation in how DMLs are dealt with and, as is agreed between the MMO and the Applicant, it is proposed that a consistent approach is taken in respect of all future offshore wind farm DCOs/DMLs in this respect.</p> <p>It should also be noted that under Schedule 15 of the dDCO, the relevant planning authorities (who have a statutory function</p>	

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

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	<p>Planning Authority has 8 weeks in which to decide an application (this is extended to 13 weeks for ‘major developments’ or 16 weeks where an environmental statement is required) and an application is ‘deemed refused’ if these timescales are not met unless the timescale is extended with written agreement of the Applicant.</p> <p>There are similar provisions in the Environment Permitting Regulations (England and Wales) 2016. The Environmental Agency (EA) has 4 months in which to determine applications received unless this is extended with the Applicant’s written agreement. Where the EA fails to meet the timescale and no agreement is given by the Applicant, then the Applicant is able to serve a notice on the EA after which the licence is ‘deemed’ to have been refused and the Applicant can then appeal this decision.</p>	<p>analogous to that of the of MMO) are subject to a bespoke arbitration/appeals procedure.</p> <p>The Applicant refers the MMO to its Comments on Relevant Representations document for a further justification relating to nationally significant energy projects departing from the standard marine licences.</p>	
New cable protection works	<p>The MMO has significant concerns regarding the implication that new cable protection works are considered, by the Applicant, to be licenced for deployment at any time during the operation of the works. These concerns are set out in comments 2.1.34 to 2.1.39 of RR (see below).</p> <p>On all previous developments, the MMO has been clear that it considers that once the construction period has ended any subsequent construction activities will need to be separately licenced. The reason the MMO has taken this stance is due to the inherent uncertainty in licensing such works to be constructed at any point within a large temporal and spatial scale. The marine environment is a dynamic system and therefore it is impossible to accurately assess the impacts of intermittent construction</p>	<p>The Applicant can confirm that new areas of cable protection required during the operation stage would be subject to a separate marine licence. The wording of the current DCO does not allow for the Applicant to install new areas of cable protection during operation.</p> <p>The Outline Operations and Maintenance Plan OOOMP (APP-703) demonstrates this in the Table in Appendix 1 that has a “yes” in the ‘Additional Licence’ likely to be required column against cable protection.</p>	Agreed

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

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	<p>works on the development over its proposed 30 year operational lifespan.</p> <p>In addition the ES has considered the construction of the works and the worst case scenario that these works will be deployed for the full operational lifetime. There is no consideration of the impacts from deploying cable protection up to twenty-five years following construction. The ES also assessed recovery. However, if further construction works can occur at any point in the duration of the operational lifetime then the ability of the habitat to recover is in question. This also raises questions about consideration of disturbance impacts to both ecological receptors as well as socio-economic receptors.</p>	<p>The Applicant wishes to highlight that the assessments presented in the ES are based upon the worst case scenario relevant to a given potential impact, as drawn from details pertaining to the type, quantity and location of scour and cable protection specified in the Project Description. Table 3 of the Outline Scour and Cable protection plan (APP-707) details the ES chapters and relevant impact assessments which consider these impacts. Impacts were assessed as negligible or minor significance (i.e. not significant) based on the worst case scenario at the time of the DCO submission. The worst case scenario has been further refined, as presented in Sections 2 and 3 of the Outline Scour and Cable protection plan (APP-707). It is important that an assessment is made within the ES to comply with the EIA regulations and the worst case scenario has a high degree of contingency. It is very much the aim of the Applicant to undertake sufficient sand wave levelling to ensure that cables remain buried for the life time of the project. Furthermore, the Applicant would always attempt to rebury cables should they become exposed before applying to the MMO for a separate licence to install cable protection. In order to obtain the licence, the Applicant would need to satisfy the MMO that there would be no further significant impacts.</p>	<p>It is agreed by both parties that new areas Cable Protection during operation would require a separate marine licence</p>
	<p>The uncertainty of these works is further compounded by the significant spatial scale over which they may occur. This development includes many kilometres of cable installed over a vast area of the seabed. With, as yet, no specific cable layout provided.</p> <p>(D6) MMO are satisfied that the revised wording in the OOOMP and the DCO require that a separate licence would be required for additional cable installation.</p>	<p>New areas of cable protection installed during the operation phase of the project would be subject to a separate marine licence. It is unreasonable to expect a project to have a detailed cable array layout at this stage of the project; the Applicant is unaware of any offshore windfarm that has made its DCO application with a final array layout fixed at the point of submission.</p> <p>(D6) The MMO have reviewed the updated OOOMP submitted at deadline 5 [REP5-029] and are content that this matter is now</p>	<p>(D6) Agreed</p>

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
		resolved.	
	<p>The MMO considers that, prior to licensing such works, a consideration must be made whether it is reasonable to consider that all impacts from these works have been assessed to the extent that the uncertainty is reduced to sufficient levels to grant consent. The MMO would also raise the question on whether all parties who may be impacted by such works over such a large undefined spatial and temporal scale have been given a reasonable chance to raise their concerns. The MMO does not believe this to be the case.</p>	<p>The worst case scenario for the extent of cable protection and cable repairs has been assessed and is clearly stated within the DCO application documents. The same worst case scenario was also clearly stated within the PEIR which was consulted on as part of the Applicant's section42 consultation. Further consultation would be undertaken as part of the application process for the additional marine licence if required.</p>	Agreed
	<p>The MMO notes that the definition of 'maintain' on both the DCO and DML includes: inspect, upkeep, repair, adjust and alter. And further includes remove, reconstruct and replace. The MMO considers the deployment of cable protection is not covered by this definition of maintain and therefore would be considered part of construction.</p> <p>The MMO requests that it is made explicit within the DCO that cable protection may only be deployed during construction, and deployment at any other time during the operational lifespan is approved through separate licence applications. The MMO would like to be confident and ensure that there is no confusion in the future and make it clear to any undertaker what is licensable in the text of the DCO rather than in another document.</p> <p>(D6) The MMO are satisfied that the revised wording in the OOOMP and the DCO require that a separate licence would be required for additional cable installation.</p>	<p>The Applicant agrees and acknowledges that a separate marine licence would be required for such activity and therefore the DCO, as currently drafted, does not allow for new areas of cable installation.</p> <p>The Applicant does not consider it necessary to amend the DCO or the definition of maintain, which states:</p> <p>"maintain" includes inspect, upkeep, repair, adjust and alter and further includes remove, reconstruct and replace (but only in relation to any of the ancillary works in part 2 of Schedule 1 (ancillary works), any cable and any component part of any wind turbine generator, offshore electrical substation, accommodation platform or meteorological mast described in Part 1 of Schedule 1 (authorised development) not including the alteration, removal or replacement of foundations), to the extent assessed in the environmental statement; and "maintenance" is construed accordingly."</p> <p>It is clear from this definition that construction of new cable</p>	(D6) Agreed

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
		<p>protection in new areas is not permitted within the definition of maintain.</p> <p>In addition, the outline Offshore Operations and Maintenance Plan (APP-702) makes it clear that, in order to install new areas of cable protection, a separate licence would need to be granted. This plan is secured as an outline plan under Article 37 and the final version must be in accordance with the outline plan and submitted to the MMO prior to commencement of licensed activities (condition 14(1)(j) of Schedule 9-10, condition 9(1)(j) of Schedule 11-12 and condition 7(1)(i) of Schedule 13)). The detail is therefore secured within the plans and the Applicant does not consider that the DCO needs amending further.</p> <p>(D6) The MMO have reviewed the updated OOOMP submitted at deadline 5 [REP5-029] and are content that this matter is now resolved.</p>	
<p>DCO Interpretations , Articles and Requirements Comments</p>	<p>The MMO questions the inclusion of “scour protection” as equipment in the interpretations for “gravity base”, “jacket foundation”, “monopile foundation” and “tetrabase foundation” as this is a separate entity.</p> <p>The MMO are content with the change made by the Applicant and this can now be agreed</p>	<p>The Applicant considers that the definitions are appropriate and in line with precedent.</p> <p>Notwithstanding this, the Applicant proposes to tweak the wording in each of the respective definitions in order to address the MMO's concern. By way of example, the Applicant has included the revision in the context of "gravity base" below:</p> <p>“gravity base” means a structure principally of steel, concrete, or steel and concrete which rests on the seabed either due to its own weight with or without added ballast or additional skirts and associated <b>materials and</b> equipment including scour protection, J-tubes, transition piece, corrosion protection systems, fenders and maintenance equipment, boat access systems, access ladders and access and rest platform(s) and equipment;</p> <p>The Applicant will make this change in the next version of the dDCO.</p>	<p>Agreed</p>

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	The MMO recommends that all references to Natural England should be amended to the Statutory Nature Conservation Body (SNCB) and an interpretation should be added to define the SNCB in both the DCO and DMLs.	The Applicant notes this response and proposes to amend the definition in the DMLs accordingly in the next version of the dDCO.	Agreed
	<p>Schedule 1, Part 1, (1), the MMO highlights that the drill arisings figure does not match the worst case scenario within Environmental Statement (ES) Chapter 5. The MMO notes that this does match the total worst case scenario presented within document 8.15 Proposed Sediment Disposal Sites_ Site Characterisation Report and in ES Chapter 8. The MMO expects the ES Chapter 5 project description to include all worst case scenarios including the overall total drill arisings.</p> <p>The MMO recognise that although these volumes are provided within chapter 5 of the ES they are provided in other chapters of the document and therefore are content that this can be agreed.</p>	<p>The Maximum total of drill arisings within the DCO are correct, these would comprise of:</p> <ul style="list-style-type: none"> <li>• Monopile wind turbine foundations = 397,608m<sup>3</sup> (see para 92 of the project description)</li> <li>• Offshore Service platform 848m<sup>3</sup> (not specified in the project description, but included in Chapter 8 Marine Geology, Oceanography and Physical Processes, APP-221)</li> <li>• Met masts 565.5m<sup>3</sup> (single) 1,131m<sup>3</sup> for both (not specified in the project description, but included in Chapter 8 Marine Geology, Oceanography and Physical Processes, APP-221);</li> <li>• Lidar monopiles 188.5m<sup>3</sup>;</li> </ul> <p>All of the above is secured within the total for Schedules 9 and 10 (Generation) with the total of 399,776m<sup>3</sup>.</p> <ul style="list-style-type: none"> <li>• Piles for electrical platforms 7,069m<sup>3</sup> (for a single pile, see Table 5.16 of the Project description, APP-218), 14,137m<sup>3</sup> for both.</li> </ul> <p>All of which combines to a grand total of 413,913m<sup>3</sup> which is the total used in the EIA, document 6.7 EIA and DCO Reconciliation Document (APP-689) and the document 8.15 site characterisation report.</p>	Agreed



Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>The MMO requests all licensed activities should be limited to the maximum parameters assessed within the Environmental Statement (ES), and these should be clearly defined on the Deemed Marine Licence's (DML). This is to ensure proper scrutiny and ensures accountable, transparent and public due process is applied. This approach is consistent with the process that is followed for standard marine licences granted by MMO.</p>	<p>The Applicant would refer the MMO to Document 6.7 EIA and DCO Reconciliation Document (APP-689) which illustrates how the worst case parameters assessed within the ES cannot be exceeded by the conditions secured within the DCO.</p> <p>The key parameters within the ES are all secured within the Requirements and/or DML conditions within the dDCO.</p>	(D6) Agreed
	<p>The MMO understands the Applicant has included the cable crossings in the total cable protection within the DCO. The MMO does not feel that this is detailed enough to be able to adhere with comment 2.2.4. The specifics relating to the deployment of cable protection are an important factor and this needs to be acknowledged within the DCO/DMLs.</p> <p>If the Applicant does not propose to exceed any of the maximum parameters assessed in the ES, this will result in no additional burden for the Applicant from the inclusion of these parameters on the face of the DMLs, whilst providing greater clarity on what is permitted in order for the MMO to ensure compliance.</p> <p>It is the MMO's view that the applicant could be reasonably expected to have a good idea of the number of cable crossings that are involved and could provide a confident worst case scenario. Since cable crossings are an area of impact and interest to stakeholders, the MMO considers that the applicant should stipulate this explicitly.</p> <p>(D6) It is the MMO's preferred position to be specific regarding parameters on the DML wherever possible. The MMO acknowledges the Applicant's comments on the</p>	<p>The Applicant does not consider it necessary to include a maximum number of cable crossings in the DMLs. The cable protection figures are the salient measures in this respect. The figures for cable protection have been based on the parameters assessed in the ES. Whilst the Applicant does of course not intend to exceed the maximum parameters assessed in the ES, the Applicant has used available data to estimate the number of cable crossings, and there is potential for historic cables to be unregistered. Therefore, if crossings can be achieved using cable protection up to the maximum area and volume included in the DCO then these should be permissible. Accordingly, flexibility is sought within the parameters assessed (i.e. maximum cable protection figures) to confirm the maximum number of cable crossings at the pre-commencement stage once this further detail is known and can be confirmed. The Applicant considers that the level of detail regarding the precise number of cable crossings would be agreed as part of the final scour protection and cable protection plan (Condition 14(1)(e) of the Generation DMLs and Condition 9(1)(e) of the Transmission DMLs).</p> <p>Notwithstanding the Applicant's view above, the Applicant has included the total number of cable crossings for the HHW SAC given its status as a European site. This detail is stated in the proposed outline Norfolk Boreas Haisborough, Hammond and Winterton Special Area of Conservation Site Integrity Plan (at Table 3.1 and Section 5.5.1), which is to be secured pursuant to Condition 9(1)(m)</p>	(D6) Agreed



**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>matter of cable crossings and on this occasions accepts that specific instances of cable crossings cannot be specified at this time and volumes of cable protection are secured within the DCO/DML.</p>	<p>of the Transmission DMLs.</p>	
	<p>If the Applicant does wish to undertake activities that are out with the maximum parameters assessed and considered under the original DCO, the appropriate process for dealing with this would be through a request to vary the DML, whereby the MMO can evaluate whether the proposed changes can be permitted.</p>	<p>The Applicant agrees with this statement save that the Applicant may also be entitled to apply for a separate marine licence for the specified works.</p>	<p>Agreed</p>
	<p>The MMO recommends that the individual structure volumes and areas should be included within the face of the DCO. The MMO suggests the table from the Outline Scour Protection and Cable Protection Plan could be added to the design parameters within the DML.</p>	<p>The Applicant's position is that as the DML conditions specifically require that the final plan must accord with the outline plan it is not necessary to include the level of detail sought by the MMO on the face of the DMLs. The DMLs and the DCO would become unwieldy if the details within the plans were placed on the face of the DCO.</p>	<p>(D6) Agreed</p>

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>The reason for this is when parameters are assessed in the ES these should be stipulated within the DMLs. This makes scope of works clearer for the purposes of compliance, monitoring and enforcement. This request ensures that any change to the worst case scenario can be fully reviewed through the variation process and this can be widely shared and advertised to ensure all users of the sea can comment through the consultation process.</p> <p>(D6) The MMO recognise that the Applicant’s DCO does contain more parameters than previous DCOs and following the applicant’s updates to Requirement 5(4), Condition 3 and 8 in schedules 9 and 10 and Condition 2 in schedules 11-13 which link the DCO to parameters in the Outline Scour and Cable protection Plan (document 8.16), the MMO are now in agreement with the Applicant on this matter for Norfolk Boreas Offshore Wind Farm Project only.</p>	<p>Provided the figures contained within the plan are fixed as a worst case (which is the position here), the worst case cannot be changed without a variation of the DMLs; if it was changed the final plan would not be in accordance with the certified outline plan as the relevant condition requires. Therefore, the Applicant does not consider it necessary to further amend Condition 14(1)(e) (Schedule 9-10) or Condition 9(1)(e) (Schedule 11-12) to include a breakdown of scour protection figures on the face of the DMLs.</p>	
	<p>The MMO stresses that if the Applicant wanted to undertake an activity beyond what was considered in their Outline Scour Protection and Cable protection plan or Environmental statement then the process requires a variation to the 'regulatory decision' which triggers the MMO to reconsider whether the ES remains valid, and the variation must be considered and decided in light of the information in and the conclusions from the ES. If any amendments are requested that are out with the maximum parameters assessed, then these should correctly be requested through a variation to the DML. Through the DML variation process, the proposed amendment will be afforded the appropriate level of scrutiny and MMO has the opportunity to undertake further public or direct consultation as it deems appropriate.</p>	<p>The Applicant agrees that if the works or activity fall outside of that assessed in the ES then they will need to apply to vary the current DML or apply for a separate marine licence for the specified works.</p>	<p>Agreed</p>

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>The MMO notes both the DCO and ES project description provide assessment of specific volumes of boulder relocation work. The MMO requires this to be included within the DMLs as a licenced activity.</p> <p>(D6) The Applicant have clarified that boulders would only be moved very small distances to avoid the site of the works and therefore the MMO is satisfied that it is not necessary to include this as a licenced activity within the DMLs</p>	<p>Disposal volumes have been separated into drill arisings and dredged sediment in the dDCO. Any boulders of significant size would be relocated as assessed in the ES. These would not be lifted to the surface and are therefore not considered in the volumes for disposal. The Applicant considers that it is not practicable or necessary to distinguish between sand and mud volumes.</p> <p>Notwithstanding this, the Applicant has secured the amount of boulders to be cleared within the HHW SAC within the Outline HHW SAC SIP (document reference 8.20). This is secured within condition 9(1)(m) of the Transmission DMLs (Schedule 11-12).</p>	(D6) Agreed
	<p>The MMO requests the Applicant to identify where the following requirements are captured within the DMLs: the information on the planned disposal schedule, sediment characteristics of any drill arisings and location where they are disposed of, along with a more accurate assessment of the potential impacts.</p>	<p>Condition 14(1)(d) of Schedules 9 and 10 (and Condition 9(1)(d), Schedule 11-12) of the DCO states that the PEMP will include the following scope:</p> <p><i>A project environmental management plan (in accordance with the outline project environmental management plan) covering the period of construction and operation to include details of—</i></p> <p>...</p> <p><i>(iii) waste management and disposal arrangements;</i></p> <p>The Final PEMP would require agreement with the MMO in consultation with the SNCB.</p> <p>In addition a Site Characterisation Report is in the process of being agreed with the MMO. This will allow the MMO to release a Site Disposal Reference, which in turn will be secured in the DCO through Part 3 of the DMLs.</p>	Agreed
DML Schedule 9 - 13 Comments	<p>The MMO requests clarity on the Applicant’s definition of ‘inert’, for example in schedules 9-13, Part 3, 1(d), most of the sediment to be removed is sand with some glacial material, gravel and boulders however there is some fine material associated with the samples and, even though</p>	<p>The contaminant sampling showed no exceedance of any contaminants above Cefas Action level 2 (Chapter 9 Marine Water and Sediment Quality APP-222) and therefore the Applicant does not believe there to be any significant contamination within the offshore project area. The low levels of contamination the MMO</p>	Ongoing discussion

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>low, contain contaminants. It needs to be clear that any material containing contaminants cannot be disposed of within the disposal sites. The MMO still has outstanding queries regarding this point.</p>	<p>refer to here are for that of Arsenic. These exceedances are considered to be marginal as they are only just over the Action Level 1 concentration. Elevated levels of arsenic are typical of this region of the southern North Sea. These are associated with estuarine and geological inputs and seabed rock weathering therefore they are in line with sample results for metals. It should be noted that all material would be placed back on the seabed as close to the dredging location as possible albeit avoiding <i>S.spinulosa</i> reef.</p> <p>The wording used within schedules 9-13 of the DCO to describe disposal of material follows the precedent set by previous offshore wind farm DCOs such as East Anglia THREE and Norfolk Vanguard, therefore the Applicant does not propose to amend the wording.</p>	
	<p>Throughout the DMLs the formatting of units are different, this needs to be consistent throughout the document. (e.g. m<sup>3</sup> and cubic metres and some have spaces after the number).</p>	<p>The Applicant notes this and will review the dDCO and make any changes accordingly.</p>	<p>Agreed</p>
	<p>The MMO notes that the cumulative sound exposure level scenarios consider the risk of PTS from the repeated percussive strikes required to install a single monopile or four pin piles. The NOAA marine mammal noise exposure criteria (NMFS, 2018) are based on an accumulation period of 24 hours. Therefore, the risk assessment is only valid under the assumption of a single pile being installed per 24- hour period. The MMO recommend this is reflected in the DCO/DMLs.</p> <p>If the Applicant would like to allow for the installation of more than one pile per 24-hour period, then scenarios reflecting the worst case number of piles to be installed per 24 hours should be included in the application.</p> <p>The MMO agree that the development and management of the SNS SAC SIP and MMMP (both within and without</p>	<p>The Southall et al. (2019) paper, which includes the same NOAA (NMFS, 2018) thresholds and criteria but is a peer-reviewed and more recent paper states:</p> <p><i>“There are insufficient direct measures of TTS from different exposure intermittency patterns in marine mammals to define an explicit duration of intermittency between exposures following which they should be considered discrete exposures and, thus, no longer accumulated using a single SEL value. While Southall et al. (2007) suggested a 24-h period for this interval, some of the basis for that distinction was related to behavioural issues rather than explicitly hearing effects. Limited available data on exposure intermittency and recovery from a hearing perspective would suggest that a shorter than 24-h exposure intermittency would be appropriate to reset the cumulative SEL calculations for multiple exposures (see Finneran, 2015). It is unlikely that a simple and uniform relationship</i></p>	<p>(D6) Agreed</p>

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>designates sites) is where, if required, any issue of concurrent piling within the project and between Norfolk Boreas and Norfolk Vanguard and the number of piles to be installed in a 24 hour period can be assessed further to determine, if any restrictions or mitigation is required.</p>	<p><i>exists across all species and exposure scenarios and that case-specific evaluations will likely be required to evaluate an appropriate reset duration.</i></p> <p>Therefore Southall et al. (2019) note <i>“that in many realistic exposure conditions, the 24-h rule for SEL “reset” may be inappropriately long and further scientific investigation of these issues, especially for species with some existing TTS data, is clearly needed.”</i></p> <p>Therefore, the applicant considers that this will be taken into account, if required, when developing the MMMP and SIP pre-construction based on the latest guidance, scientific evidence and information. The MMMP and SIP are secured in the DCO through Condition 14(1)(f) and Condition 14(1)(m).</p> <p>It should also be noted that piling is not continuous for subsequent piles, even pin-piles for jackets, as there are breaks between piling in order to move to and get the next pile into position.</p>	
	<p>The MMO advises the Applicant that they may need a wildlife licence for European Protected Species (EPS) and the information can be found: <a href="https://www.gov.uk/guidance/understand-marine-wildlife-licences-and-report-an-incident">https://www.gov.uk/guidance/understand-marine-wildlife-licences-and-report-an-incident</a></p>	<p>The Applicant refers the MMO to the Consents and Licences document (reference: APP-213) which outlines that any EPS licence will be applied for, as necessary, post-DCO consent and when the design of the wind farm is being finalised.</p>	Agreed
	<p>Part 4, condition 9 (8), the word ‘working’ needs to be added: ‘A notice to mariners must be issued at least ten working days prior...’</p>	<p>This suggested change is not consistent with precedent. Previous DCOs, including the draft Norfolk Vanguard Order [2019], the draft Hornsea Project Three Order [2020] and the as made East Anglia Three Order 2017 all include a time period of ten days. To amend this to working days has the effect of adding 4 extra days to the timeframe, which is not considered proportionate in the circumstances.</p>	Ongoing discussion

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>Part 4, condition 9 (12), the time scale needs to be changed from five days to three days.</p> <p>(D6) The MMO understand the Applicant and the MCA have agreed alternative wording below. The MMO is content with the new wording.</p> <p><i>(12) In case of exposure of cables on or above the seabed, the undertaker must within three days following the <del>receipt by the undertaker of the final survey report from the periodic burial survey</del> identification of a potential cable exposure, notify mariners by issuing a notice to mariners and by informing Kingfisher Information Service of the location and extent of exposure. Copies of all notices must be provided to the MMO and MCA within <del>three</del> five days.</i></p>	<p>This suggested change is not consistent with precedent. Previous DCOs, including the draft Norfolk Vanguard Order [2019] refer to a period of five days and there is no justification for departing from this. This is also not consistent with the other timeframes in the DML (of five days) for similar notifications.</p> <p>(D6) Notwithstanding the above, the Applicant has made the change suggested by the MMO in the version of the DCO which was submitted as Deadline 4 [REP4-004].</p>	(D6) Agreed
	<p>Part 4, condition 12 (4), the MMO recommends the following text be added at the end of the condition: "When no activity has taken place a null (0) return must be provided"</p>	The Applicant will update the next version of the dDCO accordingly.	Agreed
	<p>Part 4, condition 12 (5), should be amended to ensure that any material of non-natural origin must be disposed of to an appropriate disposal site onshore. Subject to any requirements under the appropriate archaeological conditions.</p> <p>(D6) Following discussion with Natural England and the Applicant on the 17 February 2020 the MMO are now satisfied that the Condition as worded (containing the wording "Any other materials must be screened out before disposal of the inert material at this site") is appropriate and therefore this matter has been resolved.</p>	The Applicant considers that all material dredged or drilled from the seabed would be on natural origin. Furthermore, all material would be disposed of within the vicinity of the dredge location and therefore would not be transported far from source. Therefore, the wording of the DCO should remain in keeping with the precedent set by previous DCO projects.	(D6) Agreed

**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	Part 4, condition 14 (1), does not include timescales for the documents to be submitted to the MMO before construction in all sub conditions (only sub condition (b) and (j) includes a timescale for documents to be submitted to the MMO). The MMO understands that condition 15 (3) does advise a timescale for all documents to be submitted, however each condition and sub condition needs to be appropriate and have a consistent approach. The MMO requests this condition is more explicit for each sub condition, notwithstanding the MMO comments on the specific timescales (four vs six months) in section 2.1.	<p>The general position is that stated under Condition 15(3) in that each programme, statement, plan, protocol or scheme required to be approved under condition 14 must be submitted for approval at least four months prior to the intended commencement of licensed activities (unless stated otherwise). Condition 14(b) is an exception where it is necessary to 'otherwise state' the timeframe. The express reference to a timeframe within condition 14(1)(b) is necessary given that the four month deadline is relevant for the submission of details at different stages and prior to certain events (as opposed to that under the general Condition 15(3) position) – for instance, prior to the first survey, prior to construction, and prior to commissioning. Equally, Condition 14(1)(j) secures the Operation and Maintenance plan. This plan is not applicable for the construction stage; it must be submitted at least four months prior to commencement of operation of the licensed activities. Condition 14(1)(j) therefore falls outwith the general rule under Condition 15(3).</p> <p>The Applicant does not therefore consider it necessary to amend the conditions in this manner.</p>	Agreed
	Part 4, condition 14 (1) (g) (iii), The MMO has concerns in relation to the use of cable protection after construction as per the comments in section 2.1. The MMO is continuing discussions internally relating to new cable protection and will provide more comment during examination.	The Applicant acknowledges that a separate marine licence would be required for any new areas of cable protection required during the operation phase.	(D6) Agreed
	Part 4, condition 16, the MMO requests to be added to this condition to receive notification of this data being sent, within five days of submission.	The Applicant will update the next version of the dDCO accordingly.	Agreed
	Part 4, condition 20 (2) (a), this condition implies to that only one survey will be conducted in any event. However, the Offshore In Principle Monitoring Plan table 4.2 highlights that in the event of damage to Annex 1 reef	The obligations in condition 20(2)(a) are in respect of the surveys referred to in sub-paragraph (1) (i.e. all the post-construction surveys) and condition 14(1)(b) (the construction programme and	Agreed

Table 8 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>features further surveys may be needed as to be agreed with the MMO, in consultation with NE. The MMO recommends that this condition is altered to reflect that more than 1 survey may be needed. For example the use of the term appropriate surveys as used in condition 18 (2) (a).</p> <p>The MMO are satisfied by the Applicants response and can agree this</p>	<p>monitoring plan).</p> <p>The MMO must be satisfied and approve both the construction programme and monitoring plan (pursuant to Condition 14) and the post-construction surveys under condition 20. The MMO therefore has sufficient opportunity to raise any further points during this approval process.</p> <p>Accordingly, the Applicant does not propose to change the DCO.</p>	
	<p>Part 4, condition 22, the MMO recommends this condition is amended to include the final location of scour protection to ensure the MMO and any relevant stakeholders are fully aware of the “as built” situation. The MMO requires this information for monitoring and enforcement as the reporting of this would allow MMO to ensure compliance with this element of consented parameters as assessed in the environmental statement. Reporting of cable and scour protection</p> <p>22.—(1) Not more than 4 months following completion of the construction phase of the authorised scheme, the undertaker must provide the MMO and the relevant statutory nature conservation bodies with a report setting out details of the cable protection and scour protection used for the authorised scheme.</p> <p>(2) The report must include the following information—</p> <p>(a) location of the cable protection;</p> <p>(b) volume of cable protection;</p> <p>(c) any other information relating to the cable protection as agreed between the MMO and the undertaker.</p> <p>(a) location of the scour protection;</p> <p>(b) volume of scour protection;</p> <p>(D6) The MMO is content with the updated DCO.</p>	<p>The Applicant does not consider that this change is necessary; the additional wording in relation to scour protection is not in line with precedent following as-made Development Consent Orders and the Norfolk Vanguard draft DCO and the Hornsea Project Three draft DCO. In addition, the Applicant’s understanding is that reporting of cable protection is required as this could be deployed anywhere along the cable routes, whereas for scour protection this will be deployed around foundations and is, in any event, controlled through the Scour Protection and Cable Protection Plan (secured under Condition 14(1)(e) Schedule 9-10, and Condition 9(1)(e) Schedule 11-12).</p> <p>(D6) Notwithstanding the above The Applicant has included scour protection in the version of the DCO which was submitted as Deadline 4 [REP4-004].</p>	(D6) Agreed



**Table 8 DCO, Deemed Marine Licences and Other DCO documents**

Topic	MMO Position	Norfolk Boreas Limited position	Final position
	<p>Inclusion of clear requirements to monitor the benthos in DMLs will allow for a coordinated and consistent data collection process which can inform evidence-based decisions around monitoring requirements in the future.</p> <p>Careful consideration of the location of primary and secondary impact areas, in addition to reference areas, should be made to aid station placement such that impacts on the benthic assemblage can be assessed in a robust and accurate manner that is specific to the activity being assessed (e.g. turbine placement and operation / disposal of material).</p> <p>Therefore, it is recommended that post-construction monitoring is conducted, and included in DMLs for OWFs as standard practice, to assess long-term changes in benthic assemblages. It would appear that this is not currently captured in the DML as condition 18 (2) (a) relates to Annex 1 reef specifically.</p> <p>(D6) The MMO welcomes the update to the IPMP. The MMO is currently in discussion with it's Scientific Advisors and will provide an update at Deadline 7 on if this satisfies the MMO to be able to resolve the matter.</p>	<p>The Applicant does not believe that such requirements should be included within the DML. Post construction monitoring is included in the IPMP (APP-703), which is secured through Condition 14(1)(b), Condition 20 and Condition 21 (Schedule 9-10).</p> <p>(D6) Notwithstanding the above the Applicant has updated the section 4.3 of the IPMP (document reference 8.11 REP5- 031) to make it clear that the scope of the benthic surveys could be expanded post consent if there is good evidence to do so. The updated text states:</p> <p><i>If, at the time of completion of the final detailed plan, there is good, evidence based, justification for increasing the scope of the benthic surveys to include other benthic monitoring techniques then this will be agreed with the MMO and included within the final plans.</i></p>	<p>Ongoing discussion</p>

Table 9 DCO, Deemed Marine Licences and Other DCO documents

Topic	MMO Position	Norfolk Boreas Limited position	Final position
DML Schedule 9 (S9) and 10 (S10) Comparisons	Part 1: “Development Principles” & “Defence Infrastructure Organisation Safeguarding” are in a different order on each schedule.	The Applicant notes this comment and has amend in the dDCO.	Agreed
	Part 2, 6, the words “are specified below” are not included in S9.	The Applicant can confirm that the wording is consistent throughout all the DMLs. Paragraph 6 of Part 2 states that: “The grid coordinates for the authorised scheme are specified below-” —	Agreed
	S9, Part 3, 1(d) (f) needs to include “up to a total of” within the wording of the condition.	Whilst the Applicant sees this wording as slightly superfluous, the Applicant is willing to update this condition in the dDCO accordingly.	Agreed
	Part 4, condition 6, (1), should include “each foundation using piles” within the condition.	The Applicant notes this comment and will amend in the next version of the dDCO.	Agreed
	S10, Part 4, condition 9, (8) the notice should be provided to MCA as well as the MMO/UKHO as per S9.	The Applicant notes this comment and will amend this condition in Schedule 11, 12, and 13 of next version of the dDCO.	Agreed
	S9, Part 4, condition 9, (9) the notice should be provided to MCA as well as the MMO/UKHO as per S10.	The Applicant notes this comment and will amend in the next version of the dDCO.	Agreed
	S9, Part 4, condition 14, (1)(h) the word “and” needs to be removed from the section of the condition below: “...seaward of mean low water, which and must accord with the outline written scheme of...”	The Applicant notes this comment and will amend in the next version of the dDCO.	Agreed
	S10, Part 4, condition 15, (7) the words “approved” and “deemed” need to be added to the condition as per S9.	The Applicant considers that these additional words are superfluous. The Condition should read as follows:  “(7) The licensed activities must be carried out in accordance with the <del>approved</del> plans, protocols, statements, schemes and details approved under condition 14 or <del>deemed to be</del> approved following an appeal	Agreed

	<p>The MMO are content with the changes the applicant has suggested and this can now be agreed</p>	<p><i>under sub-paragraph (6) above, unless otherwise agreed in writing by the MMO."</i></p> <p>It is clear from this (revised) wording that the licensed activities must be carried out in accordance with the approved plans.</p> <p>Further, the Applicant does not consider that the appeal process referred to in sub-paragraph (6) and Part 5 of the DMLs provides a mechanism for an approval to be deemed. The reference to deemed approval can therefore be removed.</p> <p>This Condition is correctly worded (as shown above) within Schedule 10-13. The Applicant will therefore make the necessary updates to Condition 15(7) in Schedule 9.</p>	
	<p>S10, Part 4, condition 20, (4) the wording needs reviewed and any additional wording removed.</p>	<p>The Applicant notes this comment and will remove the additional wording from Schedule 10, Condition 20(4) in the next version of the dDCO.</p>	<p>Agreed</p>
	<p>S12 Part 1: "cable protection" the word "conditions" needs to be added after "ground" as per S11.</p>	<p>The Applicant notes this comment and will amend in the next version of the dDCO.</p>	<p>Agreed</p>
	<p>S12, Part 1, does not include "generation licence" interpretation.</p> <p>The MMO are content with the Applicants response and that this is agreed.</p>	<p>"Generation licence" is referenced in Schedule 11 (Transmission DML, Phase 1) . However, reference to "generation licence" is not included within Schedule 12 (Transmission DML, Phase 2).</p> <p>The reference to generation licence in Schedule 11 is necessary in the context at Condition 3(2). The condition provides that the undertaker must notify the MMO whether the project will be commenced under Scenario 1 or Scenario 2. In order to avoid duplication of the same notice, the wording at Condition 3(2) makes it clear that the undertaker does not need to provide a notice under Schedule 11 where the equivalent notification has already been provided under the "generation licence" (at Schedule 9).</p> <p>It therefore follows that this wording is not necessary within the Schedule 12, Phase 2 licence given that the notification will have</p>	<p>Agreed</p>

		<p>either been provided under (1) the generation licence, or (2) Phase 1 of the transmission licence.</p> <p>The Applicant does not therefore propose to update the dDCO.</p>	
	<p>Part 1: “outline fisheries liaison and co-existence plan” &amp; “outline offshore operations and maintenance plan” are in a different orders on each schedule.</p>	<p>The Applicant notes this comment and will amend in the next version of the dDCO.</p>	Agreed
	<p>S12, Part 4, condition 1, (2) (c) the word “combined” needs to be added to the condition as per S9.</p>	<p>The Applicant notes this comment and will amend in the next version of the dDCO.</p>	Agreed
	<p>S12, Part 4, condition 9, (1) (k) the word “appropriate” needs removed as per S11.</p>	<p>The Applicant notes this comment and will amend in the next version of the dDCO.</p>	Agreed
	<p>S11, Part 4, condition 12 needs to be updated to include the missing information as shown in S12.</p>	<p>The Applicant notes this comment and will amend in the next version of the dDCO.</p>	Agreed
Outline Offshore Operation and Maintenance Plan (APP-702)	<p>The MMO requests clarity on the difference between ‘Additional cable laying’ and ‘New cable protection’ as set out in Appendix 1. The MMO believes that no additional cable should be laid once construction is complete. The operation and maintenance should only include repair or reburial.</p>	<p>Subsea cable repairs may involve cutting out a short section of damaged cable and inserting a new section of cable which is usually slightly longer than the section it replaces. Therefore, the applicant cannot commit to 'no additional cable'.</p> <p>However, the updated OOOOMP (REP1-028) has removed the line on additional cable laying and amended cable repairs to read</p> <p><i>“Cable repairs including laying of replaced sections of cable”.</i></p>	Agreed
	<p>Appendix 1 advises that if an activity is Amber this indicates that an additional marine licence may be required if proposed works exceed those assessed within the ES or described within the DCO. The MMO does not agree that new cable protection ‘may’ require an additional marine licence and would request this is changed to Red. This is discussed further in section 2.1 of this document.</p>	<p>This will be updated to red in the next version of the OOOOMP.</p> <p>(D6) An updated OOOOMP was submitted at Deadline REP5-029 which contained the requested change.</p>	(D6) Agreed

	<p>(D6) The MMO has reviewed the updated OOOMP (REP5-029) and is content that this matter has been resolved.</p>		
	<p>The MMO recommends amending the 'Replacement or addition to cable protection in the same area as cable protection installed during construction' to just include replacement and remove addition.</p>	<p>This has been updated in Version 2 of the OOOMP which was submitted at Deadline 1 (REP1-028).</p>	<p>Agreed</p>
	<p>Within the 'Realistic Worst Case assessed in the Environmental Statement (for any activity outside those listed, the MMO should be alerted)' for cables outside the HHW SAC section, it states 'Worst Case assumes: 1 x Interconnector cables or 1 x project interconnector cables (assume a few hundred metres subject to repair)*', the MMO recommends this is amended to state 'up to the specific number' rather than 'a few hundred metres'.</p>	<p>The Applicant can now confirm that the amount of cable which may be subject to repair is up to 300m. This would apply to both the interconnector and project interconnector cables. The OOOMP will be updated accordingly.</p>	<p>Agreed</p>
	<p>Foundation replacement' should be Red not Amber within Appendix 1 as this will need to be a new marine licence as the removal and reinstallation of foundations have not been assessed in the ES.</p>	<p>This will be updated to red in the next version of the OOOMP.</p>	<p>Agreed</p>
	<p>The MMO requires confirmation within the document that the scour protection would be limited to a maximum area and depth for the 'Additional scour protection around foundations' section.</p>	<p>The DCO contains the maximum area and volume of scour protection that could be installed around foundations (Schedule 1 Requirement 11, and Condition 8 of the Generation DMLs (Schedule 9-10) and Condition 3 of the Transmission DMLs (Schedule 11-12)). Any additional scour protection placed around the foundations would be limited to those figures secured within the DCO.</p> <p>As described in Chapter 5 project description of the ES (APP-218) the maximum area of scour protection that would be placed around a single foundation would be five times the diameter of the foundation and the scour protection would be installed up to a maximum height of five meters. For the largest foundations, which are 50m gravity base foundations the maximum area would be 49,087m<sup>2</sup> and the maximum volume would therefore be 245,435m<sup>3</sup>. These are considered precautionary estimates for the purposes of establishing</p>	<p>Agreed</p>

		the worst case scenario and these figures will not be exceeded at any stage during the lifespan of the project. Appendix 1 of the OOOMP will be updated to include the following " <i>The values per foundation presented in the Outline Scour Protection and Cable Protection Plan (document 8.16) must not be exceeded over the life of the project</i> " in line covering " <i>Additional scour protection around foundations</i> ".	
	The MMO is content that all activities presented within the Outline Offshore Operations and Maintenance Plan are adequately covered in terms of their impact on the benthic assemblage.	Agreed	Agreed
	The MMO has concerns on a point in the Outline Operation and Maintenance Plan stating that 'the magnitude of changes to the Marine Physical Processes in the far-field (beyond approximately 1 km) is unlikely to be sufficient to result in a discernible impact on benthic ecology'. The MMO understands that the mapping of (hydrodynamic) impacts in the ES Chapter 8 (Figures 8.13 and 8.14 for tidal and wave flow changes respectively) does not allow an interpretation of the magnitude of change at 1km. The far-field zones of influence are shown as extending up to 20km or more from the development site, generally defined on the basis of a predicted 5% change in magnitude so, in these terms, the effects do extend more than 1km, and it is not possible to state the percent change in hydrodynamic parameters at the 1km distance. This is due to the conceptual modelling approach, concerns could also be raised as it could mean that the far-field extent of cumulative impacts from Norfolk Boreas and other nearby sites are underestimated. The MMO recommends further information is provided.  (D6) The MMO is content with the Applicant's response (AS-024).	The potential impact on waves and tidal currents is assessed at a turbine level in the chapter. The zones of potential influence are not cumulative assessments. They simply summarise the effect as maximum zone extents based on wave heights and tidal ellipses. It does not mean that effects closer to the centre are greater than those towards the edge. In reality, the effects at each turbine are small in magnitude and local in extent, and confined to a wake (tidal currents) or shadow (waves) at each turbine that do not interact with the wake or shadow at the adjacent turbine. The effect is the same at each turbine location whether it is in the middle of the array or around the outside. It is not worse towards the centre of the zone (i.e 1km rather than 20km). The boundaries of the zones of influence are showing how far the effects are felt beyond the edge of the array.	(D6) Agreed

<p>Outline In Principle Monitoring Plan (APP-703)</p>	<p>The Offshore In Principle Monitoring Plan (point 39) discusses the survey operations proposed to identify Sabellaria spinulosa reef. The use of sidescan sonar or multi-beam echo sounder acoustic methods is stated as the first step in identifying S. spinulosa reef. The MMO recommend that both acoustic methods are employed simultaneously to ensure both a measure of elevation and a measure of extent are available for interpretation, and to help identify potential S. spinulosa reef for visual assessment using Drop Down Video.</p>	<p>The Applicant can confirm that data using both SSS and MBES will be employed simultaneously, along with drop down video. This will be updated in the next version of the Outline IPMP.</p>	<p>Agreed</p>
	<p>The MMO are content that the proposed mitigation measures outlined within the ES are captured with the Draft DCO and In Principle Monitoring Plan for fish ecology.</p>	<p>Agreed</p>	<p>Agreed</p>
	<p>The MMO requires confirmation on the timelines of post-construction surveys should be conducted for a period of 3 years (non-consecutive e.g. 1, 3, 6 or 1, 5, 10) to determine any long-term effects due to placement of the windfarm.</p>	<p>AS stated in the In principle monitoring plan (APP703) "<i>post-construction survey(s) will be undertaken, at a frequency to be agreed with the MMO (e.g. 3 years non-consecutive e.g. 1, 3 and 6 years or 1, 5 and 10 years).</i>" This is secured through Condition 14(1)(b) and Condition 19-20 (Schedule 9-10).</p>	<p>Agreed</p>
	<p>The MMO requires clarity on how the long term cumulative impacts on the benthic assemblage are going to be monitored, as a whole and outside of agreement to monitor the Annex 1 Sabellaria reef, as a result of the construction and operation of the Norfolk Boreas OWF (or the cumulative long-term impact resulting from the NV and EA THREE OWFs).</p> <p>(D6) The MMO and our Scientific Advisors recognise that the updated text in the IPMP allows for the scope of the benthic surveys to be increased post consent if there is good justification to do so.</p>	<p>The Applicant believe that the findings of the Benthic ecology assessment do not warrant a full scale benthic monitoring programme. The surveys completed to date and the pre and post construction surveys outlined in the In Principle Monitoring plan (APP-703) are sufficient to fill any relevant data gaps. Therefore the Applicant does not propose to commit to any further surveys. This level of survey for wider benthic ecology is reflective or in exceedance of other offshore windfarm projects which have been granted consent or in the application process.</p> <p>Notwithstanding the above the Applicant has updated the section 4.3 of the IPMP (document reference 8.11 REP5- 031) to make it clear that the scope of the benthic surveys could be expanded post consent if there is good evidence to do so. The updated text states: <i>If, at the time of completion of the final detailed plan, there is good, evidence based, justification for increasing the scope of the benthic</i></p>	<p>(D6) Agreed</p>

		<p>surveys to include other benthic monitoring techniques then this will be agreed with the MMO and included within the final plans.</p>	
<p>Outline Fisheries Liaison and Co-existence Plan (APP-710)</p>	<p>The MMO recommends it is made clear within the document that ‘the MMO will not act as arbitrator and will not be involved in discussions on the need for, or amount of, compensation being issued’.</p>	<p>The Applicant welcomes the feedback provided by the MMO. Further detailed information with regard to the Applicant’s approach to fisheries liaison and co-existence will be included in the Fisheries Liaison and Co-Existence Plan which will be submitted post-consent for MMO approval (as specified under Schedules 9 and 10, Part 4, Condition 14.d (v) of the dDCO (Document reference 3.1, APP-020)). In line with the recommendation made by the MMO this will include a clear reference to the fact that the MMO will not act as arbitrator and will not be involved in discussions on the need for, or amount of, compensation, should economic compensation be required.</p>	<p>Ongoing discussion</p>
<p>Outline Norfolk Boreas Haisborough, Hammond, and Winterton Special Area of Conservation Site Integrity Plan (APP-711)</p>	<p>The MMO understands the uncertainties the Applicant has in relation to the cable route and location on Annex 1 habitat. The MMO believes these are covered within this document, however, the MMO does not believe the mechanism set out by the Applicant for using the SIP is appropriate.</p>	<p>The Applicant disagrees with this statement and detailed responses are provided below.</p>	<p>Ongoing discussion</p>
	<p>The MMO believes it is possible to present a worst case scenario informed with updated data to undertake a Habitats Regulations Assessment (HRA) to conclude if there is adverse effect on integrity (AEoI) due to the cable protection within the HHW SAC. This impact should be assessed alone, and with any in-combination aspects allowing a decision to be made.</p>	<p>The Applicant has set out the worst case scenario within the HRA and the SIP. The Applicant considers that it is possible without the SIP to conclude no adverse effect on integrity of the SAC because:</p> <ul style="list-style-type: none"> <li>• 1. The Applicant believes that neither the dredging of sand waves nor the introduction of cable protection will change the form and function of the Annex 1 sand banks as they will rapidly recover (as concluded in Appendix 7.1, APP-206 of the HRA)</li> <li>• 2. The applicant believes that the project will have the ability to microsite around confirmed <i>S.spinulosa</i> reef. The only locations where this will not be possible is at cable crossings</li> <li>• 3. The applicant believes that there is enough evidence to suggest that <i>S.spinulosa</i> reef would colonise cable protection</li> <li>• 4. If Sabellaria reef is present at cable crossings, by Natural England’s definitions, this is not Annex 1 reef.</li> </ul>	<p>Ongoing discussion</p>



		However, the Applicant acknowledges that Natural England do not agree with this conclusion and therefore the SIP has been developed for Natural England and the MMO to manage any potential effects of the project on the HHW SAC.	
	The MMO, therefore, questions whether it is appropriate for this process to be deferred to post consent as this could lead to looking at other options through the HRA process such as alternatives or compensation which may cause a high risk to the development and a major financial burden to the Applicant.	The Appropriate Assessment (AA) would be completed pre-consent, and a decision made based on the fact that a SIP would be implemented. The SIP would include the final design, most recent survey data and any mitigation required to ensure that that the features of the SAC would not result in AEol.	Ongoing discussion
	The MMO would not welcome such uncertainty regarding the inability to rule out AEol of the project alone and delaying the decision process post consent to manage this risk. The MMO would prefer this to be dealt with pre consent and if the project is unable to rule out AEol this needs to be dealt with during the examination stage. The MMO defers to the advice of the SNCB with the information supplied and the assessment to be made during this application process.		Ongoing discussion
	The MMO believes there is a fundamental difference in the need for a SIP between the impact alone within the HHW SAC and for the in-combination noise impact within the SNS SAC. The MMO notes that where a project has been assessed regarding impacts of noise in the SNS SAC, project impacts alone can be clearly identified, assessed and the possible mitigation to be used described, which all parties can have confidence in. The only uncertainty within the SNS SAC is the in combination impacts with other projects. The SIP was specifically utilised for that type of uncertainty.	The Applicant believes that due to the ephemeral nature of <i>S.spinulosa</i> reef and the unique position of the Norfolk Boreas project i.e. the opportunities to work synergistically with Norfolk Vanguard to minimise impacts and the fact that in order to maximise these synergies the Applicant has three different electrical solutions, the appropriate time to agree mitigation measures is at the pre-construction stage and through a SIP.	Ongoing discussion

	<p>The MMO does not want to be in a scenario in the future where multiple wind farms are consented with SIP documents for the same marine protected area on their project alone as there is a possibility that the associated risk and in combination impacts could not be assessed fully.</p>	<p>The Applicant is in the unique position of being developed in tandem with Norfolk Vanguard and therefore as the SIP has been accepted for that project, it would not be suitable to take a different path for Norfolk Boreas.</p>	<p>Ongoing discussion</p>
	<p>The MMO would prefer that the concept of a SIP for a single project be rejected and these impacts known via a worst case scenario dealt with at the time of consent through a benthic plan clearly describing possible mitigation for known scenarios.</p>	<p>The Applicant believes that the worst case scenarios across Norfolk Boreas and Norfolk Vanguard have been adequately defined to in order to undertake the Cumulative impact assessments within the ES. However, the Applicant is in discussions with the MMO as to what further information they require.</p>	<p>Ongoing discussion</p>
	<p>(D6) The MMO welcomes the proposed alternative approach set out by the Applicant in REP5-057. The MMO has made its position consistently clear regarding the need to make a decision at consenting stage regarding whether there is an adverse effect on the integrity of the HHW SAC. This alternative is relevant if the SoS decides not to defer a decision on adverse effect and therefore removes the need for a SIP as the MMO would prefer. The proposed document and condition is relevant if it is deemed there is an adverse effect (in which case derogation will be dealt with separately) or if it is deemed there is not an adverse effect. In either case, two plan conditions are proposed dealing separately with works within and without the SAC. The MMO considers this an effective approach however would wish to see outline documents fully describing current proposed mitigation to be certificated at the consenting stage.</p>	<p>(D6) The Applicant has presented further information on the Alternative condition as well as the alternative control document, the Cable Specification, Installation and Monitoring Plan (CSIMP) in Additional information to the HHW SAC position paper submitted at deadline 6 [ExA.AS-2.D6.V1]</p>	<p>(D6) Ongoing discussion</p>

<p>General comments</p>	<p>The relationship between the separate Norfolk Vanguard and Norfolk Boreas developments have been explained and the development of scenarios is outlined. However, this can become very complex and difficult to follow, the MMO recommends a table that highlights the worst case scenarios within each development consent option.</p> <p>The MMO is satisfied with this point in relation to the worst case scenario, however this has brought to light further discussions of the usability and accuracy of the Environmental statement at the end of the examination process.</p> <p>The MMO understand that ES is produced with the Rochdale Envelope Approach, this is then refined during examination and through the submission of post consent documents.</p> <p>The MMO have concerns in relation to usability of the DCO/DML in relation to the ES at the end of examination in the context of monitoring and enforcement. Due to volumes of clarification documents, additional modelling and addenda supplied by the applicant throughout the Examination, it can be extremely challenging to locate the relevant documents post-consent in order to achieve clarity as to what had been consented.</p> <p>(D6) As outlined in the MMO submission at Deadline 5 [REP5-073]. The MMO agrees in principle that rather than updating the ES one or more certified documents could show the changes to ES chapters from when the ES was completed.</p> <p>The MMO is reviewing the Applicant's submission at Deadline 5 and will continue discussions to come to an agreement on this matter.</p>	<p>The Applicant believes that the worst case scenarios across Norfolk Boreas and Norfolk Vanguard have been adequately defined in order to undertake the Cumulative impact assessments within the ES. However, the Applicant is in discussions with the MMO as to what further information they require.</p> <p>(D6) This was discussed with the MMO and Natural England on February 17<sup>th</sup> 2020 where the MMO and the Applicant generally agreed that updating the ES is not the best approach as this would require additional consultation and further examination. The Applicant has suggested that the Note on Requirements would be updated at the end of examination which would cite the latest version of each document to allow enforcement of the latest agreed parameters. The Applicant has also included a new Schedule 18 into the dDCO to capture the latest plans and documents to be certified at the end of the examination together with documents considered to form part of the environmental statement. The MMO will therefore have a complete list of all certified documents.</p>	<p>Ongoing discussion</p>
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	<p>The MMO is unable to find the worst case scenario for the drill arisings for the infrastructure offshore service platform, meteorological masts and Lidar within the ES.</p> <p>The MMO recognise that although these volumes are provided within chapter 5 of the ES they are provided in other chapters of the document. The MMO have further comments in relation to the usability and accuracy of the Environmental statement at the end of the examination process.</p> <p>The MMO understand that ES is produced with the Rochdale Envelope Approach, this is then refined during examination and through the submission of post consent documents.</p> <p>The MMO have concerns in relation to usability of the Environmental Statement (ES) at the end of examination in the context of monitoring and enforcement. Due to volumes of clarification documents, additional modelling and addenda supplied by the applicant throughout the Examination, it can be extremely challenging to locate the relevant documents post-consent in order to achieve clarity as to what had been consented-</p> <p>(D6) As outlined in the MMO submission at Deadline 5 [REP5-073]. The MMO agrees in principle that rather than updating the ES one or more certified documents could show the changes to ES chapters from when the ES was completed.</p>	<p>Row 2 of Table 8.16 Summary of worst case scenario of Chapter 8 (APP-221) provides these, as follows:</p> <p>"Therefore, the drill arisings would be as follows:</p> <p>Meteorological masts - 2 x pin-pile quadropod = 1,131m<sup>3</sup>;</p> <p>Offshore electrical platform - 2 x six-legged with 18 pin-pile = 14,137m<sup>3</sup>;</p> <p>Offshore service platform - 1 x six-legged pin-pile = 848m<sup>3</sup></p> <p>Lidar - 2 x monopiles = 189m<sup>3</sup></p> <p>The overall figure is secured within the dDCO at Condition 1 and 3 of the Transmission DMLs (Schedule 11-12).</p> <p>(D6) The Applicant will submit an update to the Note on Requirements and Conditions in the Development Consent Order [APP-022] at the end of the Examination to capture the latest (and final draft) version of each relevant plan or document.</p>	<p>Ongoing discussion</p>
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	The MMO is reviewing the Applicant's submission at Deadline 5 and will continue discussions to come to an agreement on this matter.		
Disposal Sites	The MMO agrees with the conclusions of section 5 (8.15 Proposed Sediment Disposal Sites Site Characterisation Report) which concludes that no other disposal site can be used for the volume of material. The MMO is currently working with the Applicant on the disposal sites that will be used.	An updated Site Characterisation report was provided to the MMO for review in September 2019 and then again on February follow updates requested by the MMO. This has also been submitted to the Norfolk Boreas Examination at Deadline 5 [REP5-037] and the site disposal references, once known, will be secured within the DCO.	Ongoing discussion
	Sediments resulting from pre-sweeping and drill arisings will be disposed of at least 50m from any known Sabellaria reef which should act to minimise the direct impact of smothering the benthic assemblage. Although this is in accordance with advice from NE, the MMO recommends that this figure (50 m) is assessed against current dredge disposal site requirements, e.g. when disposal of material must be outside of exclusion zones, and a decision made as to whether 50 m is sufficient to be in line with those site requirements.	That Applicant believes that a 50m buffer is sufficient to avoid impacts on <i>S.spinulosa</i> reef. <i>S.spinulosa</i> reef is not sensitive to slight smothering and only has medium sensitivity to heavy smothering, the species requires sediment to construct its tubes, therefore the Applicant believes that 50m buffer is sufficient. The Applicant is in discussions with Natural England regarding the possibility of disposing of dredged material near to the seabed by use of a fall pipe.	(D6) Agreed

### 3 SUMMARY OF OUTSTANDING CONCERNS

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Provided below is a short summary of the areas of ongoing discussion between the Applicant and the MMO.

- Marine Water and Sediment Quality
  - Further monitoring of contaminants.
- Benthic and Intertidal Ecology
  - The appropriateness and use of a Site Integrity Plan to manage impacts to the HHW SAC
- Fish and Shell Fish
  - Post construction surveys to inform further assessment of site suitability for Sand eels.
- Commercial Fisheries
  - Inclusion of wording within the Fisheries Liaison and Coexistence Plan to clarify that the MMO will not act as arbitrator in regard to compensation and will not be involved in discussions on the need for or amount compensation being issued.
- DCO, Deemed Marine Licences and Other DCO documents
  - Timescales for providing documents to the MMO
  - Arbitration and Appeals;
  - DCO Interpretations, Articles and Requirements Comments
  - Wording and specific requirements within the DMLs;
    - i. Definition of inert material
    - ii. Period of time for notice to mariners to be published;
  - Requirement for benthic survey and how this is secured;
  - The request for the designation of disposal sites is currently being processed;
  - Updating DCO documents at the end of examination.

**The names inserted below are to confirm that these are the current positions of the two parties contributing to this SOCG**

Printed Name	Paul Stephenson
Position	Senior Renewables Licensing Manager
On behalf of	Marine Management Organisation
Date	03/03/2020

Printed Name	Jake Laws
Position	Norfolk Boreas Consents Manager
On behalf of	Norfolk Boreas Limited (the Applicant)
Date	05/03/2020