



## Hornsea Project Three Offshore Wind Farm

---

### Appendix 2 to Deadline 10 submission – Benthic Impacts Control Plan

---

Date: 1<sup>st</sup> April 2019

Document Control			
<b>Document Properties</b>			
Organisation	Ørsted Hornsea Project Three		
Author	GoBe Consultants Ltd & RPS		
Checked by	Felicity Browner		
Approved by	Andrew Guyton		
Title	Appendix 2 to Deadline 10 submission – Benthic Impacts Control Plan (BICP)		
PINS Document Number	n/a		
<b>Version History</b>			
Date	Version	Status	Description / Changes
01/04/2019	A	Final	Deadline 10 Submission (1 <sup>st</sup> April 2019)

Ørsted

5 Howick Place,

London, SW1P 1WG

© Orsted Power (UK) Ltd, 2019. All rights reserved

Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2019.

## Table of Contents

1.	Introduction	3
1.1	Purpose of the Plan.....	3
1.2	Structure of the Plan.....	3
2.	Description of Project	5
3.	Designated Site Overview	6
3.1	NNSSR SAC Overview .....	6
3.2	NNSSR SAC Conservation Objectives.....	6
3.3	NNSSR SAC Advice on Management Measures .....	6
3.4	WNNC SAC Overview .....	8
3.5	WNNC SAC Conservation Objectives .....	9
3.6	WNNC SAC Site Condition Assessment.....	9
4.	Summary of Concerns Raised by Natural England	11
5.	Project Mitigation and Management Measures	12
5.1	Introduction .....	12
5.2	Mitigation & Monitoring commitments.....	12
5.3	Proposals to Aid Achievement of Conservation Objectives for the NNSSR and WNNC SACs .....	16
5.4	Further Mitigation Measures.....	20
5.5	Iterative Approach to Delivery of Mitigation and Management Measures.....	21
6.	Conclusions	22
7.	References	23

## List of Tables

Table 3.1:	Supplementary advice on conservation objectives for the NNSSR SAC (JNCC, 2017)	7
Table 4.1:	Summary of design concerns raised by Natural England	11
Table 5.1:	Designed-in mitigation & monitoring measures that will be adopted as part of Hornsea Three.	13

## 1. Introduction

### 1.1 Purpose of the Plan

- 1.1.1 The purpose of the Hornsea Project Three offshore wind farm (hereafter referred to as Hornsea Three) Benthic Impacts Control Plan (BICP) is to draw together and set out the approach for Hornsea Three to deliver the identified project mitigation or any management measures in relation to the North Norfolk Sandbanks and Saturn Reef (NNSSR) Special Area of Conservation (SAC) and the Wash and North Norfolk Coast (WNNC) SAC.
- 1.1.2 Measures outlined in the BICP in relation to Hornsea Three, will be implemented (to the extent necessary) to ensure the construction and operation of Hornsea Three would not hinder the achievement of the conservation objectives, and therefore validate the conclusion of *'no adverse effect on integrity beyond reasonable scientific doubt'* on the SACs in respect of the final design and project parameters for Hornsea Three.
- 1.1.3 The approach and measures listed in the BICP respond to the conclusions of the Habitats Regulations Assessment (HRA) detailed in the Report to Inform an Appropriate Assessment (RIAA) (APP-052). Based on the information presented in the RIAA which considered the maximum design scenario for Hornsea Three at the application stage, it was concluded that there would be no adverse effect on integrity of the qualifying features of the SAC either alone or in combination with other plans and projects.
- 1.1.4 Over the course of the Hornsea Three examination, a number of further commitments have been made by the Applicant in response to concerns raised by Natural England with regard to the conclusions of the RIAA for the NNSSR and WNNC SACs. This BICP draws together all of the measures committed to by the Applicant to demonstrate how they address the specific concerns raised by Natural England, how they will be developed and delivered, and how they are secured within the DCO.

### 1.2 Structure of the Plan

- 1.2.1 This BICP is set out as follows:
- Section 1 introduces the context for the development of the BICP;
  - Section 2 describes the elements of the project to which the BICP applies;
  - Section 3 summarises the conservation advice for the two SACs;
  - Section 4 identifies key issues raised on the conclusions of the RIAA by Natural England for each SAC;
  - Section 5 sets out the measures that have been committed to address matters raised under Sections 3 and 4, how these will be developed and delivered, and how they are secured within the DCO for each site; and

- Section 6 provides a summary of the BICP.

## 2. Description of Project

- 2.1.1 A full description of all project parameters comprising the current maximum design scenario has not been included within the BICP as this is available in the primary application documentation (see Volume 1, Chapter 3: Project Description (APP-058) and Volume 2, Chapter 2: Benthic Ecology (APP-062) and the RIAA (APP-051)), as modified by:
- REP6-038, which sets out the Applicant's proposal to install export cables within the temporary working areas within the NNSSR to maximise the potential to microsite around Annex I *Sabellaria spinulosa* reefs.
  - REP6-018 and REP4-012, which outlines the Applicant's willingness to commit to decommissioning remedial cable and/or scour protection within designated sites at the end of the operation and maintenance phase for the project, subject to agreement from regulatory and nature conservation bodies at that time.
- 2.1.2 Should there be any further refinement to the project envelope as part of the final scheme design, the changes will be captured within relevant compliance documents (namely the Design Plan and the Cable Specification and Installation Plan (CSIP)). Any such design refinements will be duly considered when discharging the commitments made within this plan, where relevant.

## 3. Designated Site Overview

### 3.1 NNSSR SAC Overview

3.1.1 The NNSSR SAC was designated as a SAC in 2017, having been confirmed as a Site of Community Importance (SCI) in 2011. The SAC covers 360,341 ha in UK offshore waters. The site is designated under article 4.4 of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Sandbanks which are slightly covered by sea water all the time; and
- Reefs.

### 3.2 NNSSR SAC Conservation Objectives

3.2.1 The conservation objectives for the NNSSR SAC are for the features to be in favourable condition, thus ensuring site integrity in the long term and contribution to Favourable Conservation Status of Annex I Sandbanks which are slightly covered by sea water all of the time and Annex I Reefs. This contribution would be achieved by maintaining or restoring, subject to natural change:

- The extent and distribution of the qualifying habitats in the site;
- The structure and function of the qualifying habitats in the site; and
- The supporting processes on which the qualifying habitats rely.

### 3.3 NNSSR SAC Advice on Management Measures

3.3.1 As identified above, JNCC currently advise that the Annex I Sandbanks which are slightly covered by sea water all of the time and the Annex I Reefs, need to be restored to favourable condition. The activities listed below have been identified as exerting pressures capable of affecting the qualifying features of the site, and therefore, these activities should be managed (by minimising further impacts on features) to restore the Annex I Sandbanks which are slightly covered by sea water all of the time and the Annex I Reefs (JNCC, 2017):

- Demersal fishing;
- Aggregate extraction;
- Cabling; and
- Oil and gas operations.

3.3.2 Further relevant supplementary advice on these conservation objectives is set out in Table 3.11.

---

<sup>1</sup> Full details of the Conservation Objectives can be found at [http://jncc.defra.gov.uk/pdf/NNSSR\\_SACO\\_v1\\_0.pdf](http://jncc.defra.gov.uk/pdf/NNSSR_SACO_v1_0.pdf)

Table 3.1: Supplementary advice on conservation objectives for the NNSR SAC (JNCC, 2017)

<b>Annex I Sandbanks</b>
<p><b>Attribute: Extent and distribution</b></p> <p><b>Objective: Restore</b></p> <p>JNCC understands that the site has been subjected to activities that have resulted in a change to the extent and distribution of the feature within the site. Installation and/or removal of infrastructure may have a continuing effect on extent and distribution. As such, JNCC advise a restore objective which is based on expert judgment; specifically, our understanding of the feature's sensitivity to pressures which can be exerted by ongoing activities i.e. oil and gas sector activities and cabling. Our confidence in this objective would be improved with longer term monitoring and access to better information on the activities taking place within the site. Activities must look to minimise, as far as is practicable, changes in substratum and the biological assemblages within the site to minimise further impact on feature extent and distribution.</p>
<p><b>Attribute: Structure and function</b></p> <p><b>Objective: Restore</b></p> <p>JNCC understands that the site has been subjected to activities that have resulted in a change to the structure and function of the feature within the site. Installation and/or removal of infrastructure may have a continuing effect on structure and function, specifically the finer scale topography, sediment composition and distribution of characteristic communities. As such, JNCC advise a restore objective which is based on expert judgment; specifically, our understanding of the feature's sensitivity to pressures which can be exerted by ongoing activities i.e. demersal fishing, oil and gas sector activities and cabling. Our confidence in this objective would be improved with longer-term monitoring, access to better information on the activities taking place within the site and a better understanding of the species which can play key and influential roles in determining the feature's function and health. Activities must look to minimise, as far as is practicable, disturbance and changes to the sediment composition, finer scale topography and biological communities within the site.</p>
<p><b>Attribute: Supporting processes</b></p> <p><b>Objective: Maintain</b></p> <p>A maintain objective is advised for supporting processes based on expert judgment; specifically, our understanding of the feature's sensitivity to pressures which can be exerted by ongoing activities. Our confidence in this objective would be improved with long-term monitoring, specifically of contaminant levels within the site and a better understanding of the hydrodynamic regime within the site. Activities must look to avoid, as far as is practicable, impairing the hydrodynamic regime within the site and exceeding Environmental Quality Standards set out in the relevant section below.</p>
<b>Annex I Reefs</b>
<p><b>Attribute: Extent and distribution</b></p> <p><b>Objective: Restore</b></p> <p>JNCC understands that the site has been subjected to activities that have resulted in a change to the extent and distribution of the feature within the site. Installation and/or removal of infrastructure may have a continuing effect on extent and distribution of the biogenic reef within the site. As such, JNCC advise a restore objective which is based on expert judgment; specifically, our understanding of the feature's sensitivity to pressures which can be exerted by ongoing activities i.e. those associated with the oil and gas industry and demersal fishing. Our confidence in this objective would be improved with longer-term monitoring and access to better information on the activities taking place within the site. Activities must look to minimise, as far as is practicable, damaging the established i.e. high confidence reef within the site</p>
<p><b>Attribute: Structure and function</b></p> <p><b>Objective: Restore</b></p>

<b>Annex I Sandbanks</b>
<p>JNCC understands that the site has been subjected to activities that have resulted in a change to the structure and function of the feature within the site. Installation and/or removal of infrastructure may have a continuing effect on structure and function, specifically the characteristic communities and sediment composition and distribution. As such, JNCC advise a restore objective which is based on expert judgment; specifically, our understanding of the feature's sensitivity to pressures which can be exerted by ongoing activities i.e. those associated with the oil and gas industry and demersal fishing. Our confidence in this objective would be improved with long-term monitoring and access to better information on the activities taking place within the site. Activities must look to minimise, as far as is practicable, damage and disturbance to the physical structure of established reef within the site and its associated biological communities.</p>
<p><b>Attribute: Supporting processes</b></p>
<p><b>Objective: Restore</b></p> <p>A restore objective is advised for the supporting habitat within the site and a maintain objective is advised for hydrodynamic regime and water quality within the site. These objectives are based on expert judgment; specifically, our understanding of the feature's sensitivity to pressures which can be exerted by ongoing activities i.e. demersal fishing and oil and gas sector activities. Our confidence in these objectives would be improved with longer-term monitoring, specifically of contaminants within the site. It would also be improved with access to better information on the activities taking place within the site. Activities must look to minimise, as far as is practicable, disturbance to the hydrodynamic regime within the site and the habitats which support the reef within the site. Activities must also look to avoid, as far as is practicable, exceeding Environmental Quality Standards for aqueous contaminants</p>

### 3.4 WNNC SAC Overview

3.4.1 The WNNC SAC was designated as a SAC in April 2015. The site encompasses an area of 107,761 ha in UK waters. The site is designated under article 4.4 of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I, and species listed in Annex II:

Annex I habitats that are primary reason for selection of site:

- Sandbanks which are slightly covered by sea water all the time;
- Mudflats and sandflats not covered by seawater at low tide;
- Large shallow inlets and bays;
- Reefs;
- Salicornia and other annuals colonizing mud and sand;
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); and
- Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*).

Annex I habitats that are present as a qualifying feature, but not a primary reason for selection of site:

- Coastal lagoons.

Annex II species that are primary reason for selection of site:

- Harbour seal (*Phoca vitulina*).

Annex II species present as a qualifying feature, but not a primary reason for selection of site:

- Otter (*Lutra lutra*).

### 3.5 WNNC SAC Conservation Objectives

3.5.1 The conservation objectives apply to the WNNC SAC as a whole and the individual species for which the site has been classified (the "Qualifying features" listed in 3.4 above).

3.5.2 The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the Favourable Conservation Status of its qualifying features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of the qualifying species;
- the structure and function (including typical species) of qualifying natural habitats;
- the structure and function of the habitats of the qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of each of the qualifying species; and
- the distribution of qualifying species within the site.

### 3.6 WNNC SAC Site Condition Assessment

3.6.1 Natural England have recently (15<sup>th</sup> March 2019) released an updated vulnerability assessment for the WNNC SAC, to which the Applicant provided detailed comments on at Deadline 6 (REP6-019). The updated condition assessment (as summarised in REP6-019) provided an update on the following qualifying features as follows:

- Sandbanks which are slightly covered by sea water all the time (72% Favourable condition, 28% Unfavourable recovering);
- Mudflats and sandflats not covered by seawater at low tide (99% Unfavourable condition, 1% Unfavourable declining);
- Large shallow inlets and bays (39% Favourable condition, 60% Unfavourable condition, 1% NA);
- Reefs (1% Favourable condition, 37% Unfavourable recovering, 61% Unfavourable condition, 1% NA); and
- Coastal lagoons (100% Favourable condition).

- 3.6.2 In the Applicant's submission at Deadline 6 (Table 2.1 of REP6-019) the Applicant noted that (due to the location and nature of the scheme and the mitigation commitments), the only feature for which an impact pathway exists comprised; *Sandbanks which are slightly covered by seawater all the time*.
- 3.6.3 Table 2.2 of REP6-019 gave a further detail (based on the Natural England site condition assessment) of the condition of the sub-features of Sandbanks which are slightly covered by seawater all the time, and the confidence in these assessments. Of the four sub-features of the Annex I sandbanks feature, only Subtidal Coarse Sediments and Subtidal Mixed Sediments were considered to have an impact pathway with Hornsea Three and were considered to be in unfavourable condition. It is noted that confidence in the condition assessment for both sub-features is "low".
- 3.6.4 Table 2.3 of REP6-019 identified the relevant physical and biological attributes and associated targets for these two sub-features and the confidence underpinning these. Detail was then presented (paragraph 2.4 onwards of REP6-019) discussing the context for those attributes where targets had not been met, namely:
- Hab\_Att\_3.01: Maintain/Recover the species composition of component communities;
  - Hab\_Att\_3.09: Restrict the introduction and spread of non-native species and pathogens, and their impacts [noting that Hornsea Three cable installation or operation would not affect this attribute]; and
  - Hab\_Att\_2: Maintain/Recover the presence and spatial distribution of Subtidal Coarse Sediment/Subtidal Mixed Sediment communities according to the map.
- 3.6.5 It is noted that the confidence levels for Hab\_Att\_3.01 and Hab\_Att\_2 were "low", due to the use of a vulnerability assessment, which requires that these attributes fail due to impacts from fisheries. The confidence level for Hab\_Att 3.09 was "Medium".

## 4. Summary of Concerns Raised by Natural England

4.1.1 It is recognised that Natural England does not accept some of the assumptions within the RIAA in relation to the NNSSR and WNNC SACs and some of the conclusions from the subsequent assessments. These concerns are most comprehensively summarised within the Natural England submissions to Deadline 7 (REP7-067; see also REP9-016). These are summarised at a high level in Table 4.1 and Table 4.2, with Section 5.2 setting out those mitigation measures and monitoring which the Applicant has committed to within its DCO application, responding to the concerns raised by Natural England (as of Deadline 7 of the examination process; REP7-067).

**Table 4.1: Summary of design concerns raised by Natural England**

Design related concerns
Sandwave clearance methodology
Disposal methodology following sandwave clearance
Cable burial
Cable protection volumes and footprints
Decommissioning of cable protection
Avoidance of Annex I reef

**Table 4.2: Summary of assessment concerns raised by Natural England**

Assessment related concerns
Sandwave recovery
Impacts on Annex I sandbank habitat (from cable installation, sediment disposal and cable protection)
Impacts on Annex I reef.

4.1.2 These concerns from Natural England are underpinned by a lack of confidence in the site condition status (as outlined in Section 3 above), the culmination of which has meant that Natural England have, to date (Deadline 7 of the examination process; REP7-067), advised that it has been unable to rule out the potential for adverse effects on integrity on the Annex I features of the NNSSR and WNNC SACs.

## 5. Project Mitigation and Management Measures

### 5.1 Introduction

- 5.1.1 The Applicant is confident that its conclusion of no adverse effect on integrity as set out in the RIAA is supported by robust evidence and analysis, underpinned by commitments to appropriate and proportionate mitigation and management measures made throughout the pre-application phase. Without prejudice to that, the Applicant has gone further during the examination process to respond to Natural England's comments and concerns and to minimise the risk that Natural England perceives of adverse effects on the designated sites and to address specific stakeholder concerns as they have been raised. Together, these commitments comprise a suite of mitigation, monitoring and broader proposals which are discussed in detail the subsequent sections.

### 5.2 Mitigation & Monitoring commitments

- 5.2.1 Table 5.1 sets out the mitigation measures that have been implemented (through formal changes to the maximum design parameters for which consent is being sought) or will be implemented during the construction, operation and decommissioning of Hornsea Three. Table 5.1 also details the relevant monitoring commitments that link to the issues raised by Natural England on these sites.

**Table 5.1: Designed-in mitigation & monitoring measures that will be adopted as part of Hornsea Three.**

Measures adopted as part of Hornsea Three	Justification	Development	DCO control
<b>Mitigation</b>			
Reduction in the maximum extent of cable corridor within the NNSR SAC from 60 km to 47 km.	To limit the interaction of the development with the designated site.	-	Captured within the defined Order Limits (Schedule 1, Part 1, Article 2)
Reduction in the maximum level of cable protection applied within the NNSR SAC from approximately 1,079,400 m <sup>2</sup> to 497,800 m <sup>2</sup> .	To limit the quantity (i.e. volume and footprint) of cable protection within the SAC.	-	Compliance will need to be demonstrated within the CSIP, which is conditioned at Schedule 12, Part 2, Condition 14(2)(h)(iv)
Micrositing to avoid Annex I reef features. For NNSR SAC, this includes the option to use of adjacent temporary working areas to install cables if necessary (see REP6-038).	To ensure that Annex I reef features are not directly impacted by the development.	Pre-construction surveys will inform the need for any micrositing, the outputs of which will be fed into the design plan and CSIP. Consultation with regulator (MMO) and SNCBs throughout process, with MMO providing final approval of all plans prior to commencement of works.	Micrositing will need to be demonstrated within the design plan (Schedule 12, Part 2, Condition 13(1)(a)(i) and (v)) and the CSIP (Schedule 12, Part 2, Condition 14(2)(h)(vi))
A commitment to use 'sensitive' cable protection material within the SACs, i.e. rock sizes that reflect the baseline environment as much as possible.	To minimise the change in sediment/substrate type, allowing some continued ecological function, thereby limiting long term habitat loss effects within the designated site.	Detail of any cable protection material will be specified within the CSIP, the content of which will be consulted on with MMO and SNCBs and approved by MMO prior to commencement of works.	Details of cable protection will be set out within the CSIP (Schedule 12, Part 2, Condition 14(2)(h)(iv))

Measures adopted as part of Hornsea Three	Justification	Development	DCO control
Commitment to a CSIP that includes bespoke Sandwave Clearance Plan and Cable Protection Plan for each of the SACs to be managed by a dedicated ECoW. To include detail on disposal process and locations (including avoiding Annex I reefs), measures to avoid rock protection, agreement of locations, volumes and material for cable protection and a comprehensive stakeholder engagement process.	To ensure MMO and SNCBs are fully engaged throughout development of the CSIP and installation process, to ensure concerns are addressed and risks to Annex I features are minimised and/or avoided, where ever possible.	As detailed within the outline CSIP (REP7-021)	Schedule 12, Part 2, Condition 14(2)(h)
Use of jack-up vessels: Exclusion of these during the construction phase and use of jack up vessels only as a last resort during operation and maintenance phase.	To minimise, wherever possible, interactions between cable vessels and the seabed within SACs, i.e. Annex I habitat features of the SAC, in response to the mitigation recommendations made by Natural England within their Deadline 7 submission (REP7-066 and REP-067).	The detail of construction methods will be set out within the Construction Method Statement (CMS) which will be approved by the MMO in consultation with the SNCBs prior to commencement of works.	Compliance will be demonstrated within the Construction Method Statement required under Schedule 12, Part 2, Condition 14(1)(c)
<b>Monitoring</b>			
Sandwave recovery	To confirm recovery timescales of sandwaves following clearance within the SACs.	Monitoring plan will be developed in accordance with the IPMP and approved by the MMO in consultation with relevant stakeholder prior to the commencement of works.	Pre-construction monitoring at Schedule 12, Part 2, Condition 18(2)(a)(i) and 18(2)(b). Post construction monitoring at Schedule 12, Part 2, Condition 20(2)(a)

Measures adopted as part of Hornsea Three	Justification	Development	DCO control
Cable installation and recovery of seabed	To confirm recovery of seabed sediment and benthic habitats (i.e. Annex I sandbank features and sub-features) following cable installation.	Monitoring plan will be developed in accordance with the IPMP and approved by the MMO in consultation with relevant stakeholder prior to the commencement of works.	Pre-construction monitoring at Schedule 12, Part 2, Condition 18(2)(a)(i) and 18(2)(b). Post construction monitoring at Schedule 12, Part 2, Condition 20(2)(a) and (c)
Cable protection monitoring	To confirm the level of sedimentary and ecological change on and in the vicinity of deployed cable protection.	Monitoring plan will be developed in accordance with the IPMP and approved by the MMO in consultation with relevant stakeholder prior to the commencement of works.	Pre-construction monitoring at Schedule 12, Part 2, Condition 18(2)(a)(i) and 18(2)(b). Post construction monitoring at Schedule 12, Part 2, Condition 20(2)(a) and (c)
Annex I reef monitoring	To confirm effectiveness of micrositing during cable installation, i.e. no direct impacts on Annex I reef features.	Monitoring plan will be developed in accordance with the IPMP and approved by the MMO in consultation with relevant stakeholder prior to the commencement of works.	Pre-construction monitoring at Schedule 12, Part 2, Condition 18(2)(a)(iii) and 18(2)(b). Post construction monitoring at Schedule 12, Part 2, Condition 20(2)(b) and (c)

## 5.3 Proposals to Aid Achievement of Conservation Objectives for the NNSR and WNNC SACs

- 5.3.1 To help improve SNCB's confidence levels associated with the current condition assessments for the NNSR and WNNC SACs, the Applicant has identified four proposals relating to the NNSR and WNNC SACs aimed at helping in the achievement of the conservation objectives of these sites (REP9-050).
- 5.3.2 The objectives of these proposals are to improve the knowledge in relation to the existing site condition for these SACs by enhancing the evidence base for features within the designated sites. For the avoidance of doubt, these proposals have been made by the Applicant without prejudice to the Applicant's position that the maximum design scenario for Hornsea Three (when considered alone or in combination with other plans or projects) would not give rise to an adverse effect on the integrity of either the NNSR or WNNC SAC.
- 5.3.3 The Applicant has committed to these proposals to directly address the confidence limitations Natural England have identified both within the condition assessments for the NNSR and WNNC SACs, and resulting concerns in relation to the Hornsea Three commitments (see REP9-050 for full details).
- 5.3.4 The Applicant acknowledges that the precise outputs of these further studies will need to be agreed with Natural England to ensure that they can feed into the site condition assessment process in an effective manner.

### **NNSR SAC Proposal 1: Study on the implications of existing infrastructure on Annex I features**

- 5.3.5 The Applicant has recognised that JNCC's confidence in their conservation objectives is limited by access to information on the activities (e.g. oil and gas infrastructure) taking place within the site (see Table 3.1). The Applicant proposes to undertake a study with JNCC to give a more comprehensive understanding of the existing infrastructure within the Annex I sandbanks feature of the SAC. This will be undertaken by quantifying the amount of [oil and gas] infrastructure currently within the SAC, including (where possible) locations, volumes and materials. Once this first stage has been undertaken, scopes for further study and monitoring could be developed with JNCC to collect further data on effects of these infrastructure on the physical and biological attributes of the Annex I features of the NNSR SAC.
- 5.3.6 The outputs of this study will be used to:
- Aid JNCC in the achievement of conservation objectives, by undertaking a more detailed and accurate condition assessment for the SAC (see Table 3.1); and

- Allow for the Hornsea Three impacts to be put into the context of this updated condition assessment, to address Natural England's residual concerns in relation to the vulnerability of the features and risk of adverse effects on integrity.

### **NNSSR & WNNC SAC Proposal 2: Decommissioning of rock protection – demonstrating effectiveness and improving efficiency**

5.3.7 The Applicant has identified that removing any remedial cable protection deployed within the NNSSR and WNNC SAC (if cable protection is used) would will help to ensure there are no permanent impacts on the Annex I features of the site. It is recognised that Natural England have questioned the Applicant's confidence, that rock protection can be decommissioned successfully, which ensure that the seabed/site features are returned to their previous condition (see REP7-076 and REP9-016). The Applicant has therefore proposed a study to validate the methods proposed to decommission rock protection and to test measures to improve efficiency of the techniques currently available (e.g. reducing effects on seabed receptors). This would involve desktop study, undertaken in collaboration with offshore installation contractors, and following the desktop study field trials in areas of seabed with similar environmental conditions as the NNSSR and WNNC SAC.

5.3.8 The outputs of this study will be used to:

- To validate the effectiveness of a mitigation measure which has been proposed by the Applicant, subject to agreement with the MMO and SNCBs, in environments with a high degree of similarity to the NNSSR & WNNC SAC (should it be determined that such measures are required).

### **NNSSR SAC Proposal 3: Monitoring the extent and condition of *Sabellaria spinulosa* reef habitats**

5.3.9 As set out in Table 3.1 and REP9-016, the Applicant understands that JNCC and Natural England consider that this Annex I habitat feature is in unfavourable condition and recommends that activities look to minimise, as far as practicable, damaging established, i.e. high confidence, reef within the SAC. The Applicant understands that Natural England have concerns with respect to the number of datasets for *S. spinulosa* reef within the NNSSR SAC to provide high confidence mapping of Annex I reefs within this SAC.

5.3.10 The Applicant proposes a collaborative study with JNCC and Natural England to determine the extents and condition of Annex I *S. spinulosa* reefs in the north west section of the SAC, i.e. the area where Saturn Reef was originally recorded and surrounding area. This is in line with the conservation objectives of the SAC which state that the objective would be improved with long-term monitoring.

- 5.3.11 The outputs of this study will be used to aid JNCC in the achievement of conservation objectives, by providing further accurate and detailed data on the condition of Annex I reefs within the SAC (see Table 3.1).

**WNNC SAC Proposal 4: Investigating the effectiveness of fisheries closures on subtidal mixed sediments and subtidal coarse sediments on the North Norfolk Coast.**

- 5.3.12 The Applicant understands that the Eastern IFCA are working with Defra to put in place a byelaw closure for shrimp beam trawling within the WNNC SAC to reduce pressure and help to restore to favourable condition the subtidal mixed sediments and subtidal coarse sediments sub-features of the Annex I sandbanks feature of this SAC. An existing byelaw, which prohibits towed demersal fishing gears, already exists along the eastern boundary of the SAC, extending into the Cromer Shoal Chalk Beds MCZ.
- 5.3.13 The Applicant understands that a Monitoring and Control Plan for the proposed shrimp beam trawling closure in the east of the WNNC SAC is being produced by the Eastern IFCA, although this has yet to be drafted. The Applicant proposes a collaborative project with the Eastern IFCA to investigate the effectiveness of the closure and help meet the relevant targets and attributes for the relevant sub-features (i.e. maintain the species composition of component communities, maintain the presence and spatial distribution of component communities). This proposal may include:
- Working with the Eastern IFCA to develop the Monitoring and Control Plan;
  - Sampling of biological communities (e.g. by sediment sampling and seabed imagery) within the proposed closure(s) on the North Norfolk Coast;
  - Analysis of sample data (e.g. PSA, benthic infaunal datasets, seabed imagery and video footage) to monitor component communities of the subtidal mixed sediments and subtidal coarse sediment sub-features; and
  - Working with Eastern IFCA to analyse data and report on the effectiveness of the closure and therefore condition of sub-features of the Annex I Sandbanks feature.
- 5.3.14 The outputs of this study will be used to aid Natural England in undertaking a more detailed condition assessment, providing site specific data on the condition of the relevant Annex I sub-features which the byelaws are designed to protect.

**Control Measure for Delivery of Proposals**

- 5.3.15 The four proposals identified by the Applicant are set out in detail in REP9-050. The Applicant proposes that this forms a certified document and that a condition is added to the DCO to provide the control measure for the delivery of these studies. The proposed wording of the proposed condition (within the Transmission Assets dML (Schedule 12)) is as follows:

*“outline Benthic Impact Control Plan” means the document certified as the outline Benthic Impact Control Plan by the Secretary of State for the purposes of this Order under article 36 (certification of plans and documents etc);*

*(X) The study proposals relating to the North Norfolk Sandbanks and Saturn Reef SAC and the Wash and North Norfolk Coast SAC must only take place in accordance with a detailed [Benthic Impact Control Plan] (which must accord with the details set out in the outline Benthic Impact Control Plan) has been submitted to and approved by the MMO.*

### **Remediation**

- 5.3.16 It is noted that Natural England's deadline 7 written summaries in respect of NNSSR and WNNC SACs (REP7-066 and REP7-067) suggest that, in respect of Annex 1 sandbanks, Natural England recommend consideration be given to remediation.
- 5.3.17 On the Applicant's assessments, based on a combination of detailed sediment dynamics and geomorphological processes theory, with detailed marine ecological sensitivity information, all supported by robust empirical evidence from analogous environments, the Annex I sandbanks feature would be expected to fully recover naturally, meaning such a plan is not necessary and does not bear on the ability to conclude no adverse effect on integrity in respect of either NNSSR SAC or WNNC SAC.
- 5.3.18 However, without prejudice to the Applicant's position, in the event that Natural England does identify proven techniques and the Secretary of State concludes that it is necessary to provide for a remediation plan, a requirement to produce a remediation plan could be secured by adding a condition to the DML contained in Schedule 12 of the DCO.

### **Delivery Timescale of Proposals**

- 5.3.19 The proposals identified above will be subject to prior approval from the MMO (in accordance with the above proposed dML wording). As part of this approval process the Applicant will set out how each study will report back in manner such that it can further inform and be used to precisely calibrate the mitigative actions identified, such as decommissioning of rock protection and or any remediation work (if the Secretary of State deems this necessary).

## 5.4 Further Mitigation Measures

- 5.4.1 Section 5.2 identifies the suite of mitigation measures and monitoring that the Applicant will undertake to a) ensure that confidence can be held in the conclusion of no adverse effect on integrity on the SACs and b) the measures the Applicant will take to demonstrate this through monitoring. The Applicant has also committed to a number of proposals to help the SNCBs manage the sites more effectively and meet the conservation objectives for the two SACs through enhancing the evidence base for the condition of the sites and pressures acting on them.
- 5.4.2 The Applicant has, in response to concerns raised by Natural England, committed to the decommissioning of any remedial cable protection material that is applied within the designated sites, if the regulatory opinion at that juncture is that such measures are beneficial / merited.
- 5.4.3 The work undertaken by the Applicant through the mitigation, monitoring and relevant proposals will all feed into the information that will be provided to the MMO to assist it in making its decision as to whether such remedial measures are required or not.
- 5.4.4 The Applicant has put forward a draft Condition at Schedule 12, Part 2, Condition 24 to act as the control mechanism for this mitigation.
- 5.4.5 Finally, the Applicant has noted that Natural England have made reference to “a remediation plan” within their Deadline 7 submissions for the SACs (REP7-066 and REP7-067). Whilst the Applicant’s clear position is that such remediation is not necessary as no adverse effect on integrity will occur (see paragraph 5.3.17 above), it has provided **without prejudice** wording below, should the Secretary of State be minded to consider that such measures are required. In such circumstance (as for any decommissioning of remedial cable protection material) the outputs of the mitigation, monitoring and proposals would be expected to inform the need for, and nature of any such remediation.

### **WITHOUT PREJUDICE: dDML condition (Schedule 12): Annex 1 sandwave remediation plan**

- (1) In the event that three post-construction high-resolution swath bathymetric surveys carried out pursuant to condition 20(2)(a) determines that recovery of sandwave features within any European site or MCZ is not occurring in a manner consistent with the predictions contained in the environmental statement, the undertaker must prepare and submit an Annex 1 sandwave remediation plan for the approval of the MMO in consultation with the relevant statutory nature conservation body. The Annex 1 sandwave remediation plan shall identify any proven remediation measures which could be undertaken to facilitate recovery of the relevant Annex 1 sandwaves. The undertaker must carry out the measures specified within the approved Annex 1 sandwave remediation plan in accordance with that plan, unless otherwise agreed in writing by the MMO in consultation with the relevant statutory nature conservation body.

## 5.5 Iterative Approach to Delivery of Mitigation and Management Measures

- 5.5.1 The mitigation measures and monitoring cited under Section 5.2 will be brought forward in consultation with the relevant stakeholders and the MMO in accordance with the relevant condition requirements of the DCO. The approach to the nature of these commitments and their outputs will be informed by the in-principle monitoring plan (REP7-020) and the outline CSIP (REP7-021).
- 5.5.2 Alongside these project specific commitments the Applicant will be undertaking a suite of further proposals three of which are aimed at assisting the SNCBs meet their conservation objectives for the two SACs, addressing the extant confidence limitations in the site condition and facilitating improved management of the sites. The decommissioning proposal is a project specific study that will help inform the scope of any future remedial work, should it be required. The commitment to delivering these proposals is secured within the draft DCO.
- 5.5.3 Whilst the individual project specific mitigation and monitoring commitments and the proposals will all be delivered and reported in accordance with their bespoke conditions within the DCO, the CSIP will serve a central function in bringing together their outputs and facilitating discussion with the SNCBs and MMO on their effectiveness in validating the conclusions of the RIAA and, if necessary, informing the need for and scope of any further remedial measures such as the decommissioning of remedial cable protection within the designated sites.

## 6. Conclusions

- 6.1.1 The BICP for the NNSSR and WNNC SACs sets out the comprehensive suite of measures that will be applied (where required) in an iterative manner as the project progresses through the pre-construction, construction and early operational phases of its development.
- 6.1.2 This BICP identifies how the measures have been specifically targeted at addressing:
- The key concerns raised by Natural England on the conclusions of the RIAA for the NNSSR and WNNC SACs; and
  - The limitations identified within the site condition assessment work undertaken by the SNCBs for the sites.
- 6.1.3 The BICP also outlines how the Applicant proposes that these measures are controlled within the DCO such that the Secretary of State can have confidence in their delivery, and confirms how each measure will combine in an iterative manner to deliver a comprehensive suite of mitigation, monitoring and research to ensure that a conclusion of no adverse effect on integrity can be confidently reached for both SACs.

## 7. References

JNCC (2017) Supplementary Advice on Conservation Objectives for North Norfolk Sandbanks and Saturn Reef Special Area of Conservation. December 2017. Available at [http://jncc.defra.gov.uk/pdf/NNSSR\\_SACO\\_v1\\_0.pdf](http://jncc.defra.gov.uk/pdf/NNSSR_SACO_v1_0.pdf)