

Norfolk Boreas Offshore Wind Farm Applicant's Comments on the Report on the Implications for European Sites (RIES)

Applicant: Norfolk Boreas Limited
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Glossary of Acronyms

AEoI	Adverse Effect on Integrity
cSAC	candidate Special Area of Conservation
DAS	Discretionary Advice Service
DCO	Development Consent Order
dDCO	draft Development Consent Order
DEFRA	Department of Environment, Food and Rural Affairs
DML	Deemed Marine Licence
ExA	Examining Authority
HHW	Haisborough, Hammond and Winterton
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Overriding Public Interest
ISH	Issue Specific Hearing
LSE	Likely Significant Effect
MMO	Marine Management Organisation
NE	Natural England
OCoCP	Outline Code of Construction Practice
OLEMS	Outline Landscape and Ecological Management Strategy
OSPAR	Oslo Paris Convention
O&M	Operations and Maintenance
PEMP	Project Environmental Management Plan
pSPA	potential Special Protection Area
PVA	Population Viability Analysis
RIES	Report on the Implications for European Sites
RSPB	Royal Society for the Protection of Birds
RTD	Red Throated Diver
SAC	Special Area of Conservation
SAD	Selection Assessment Document
SCI	Site of Community Importance
SIP	Site Integrity Plan
SPA	Special Protection Area
SoCG	Statement of Common Ground
SSSI	Site of Special Scientific Interest

1 Introduction

1. The Applicant submitted an Information to Support Habitats Regulations Assessment (HRA) report (document 5.3, APP-201) with the Norfolk Boreas Development Consent Order (DCO) application submission in June 2019 and has continued to engage with relevant Interested Parties throughout the Examination. As a result of this engagement, the Applicant has made a number of additional commitments throughout the Examination in response to submissions from and consultation with Natural England, the Marine Management Organisation (MMO) and the Royal Society for the Protection of Birds (RSPB).
2. As a result of consultation with Natural England, additional assessment and clarification to supplement the Information to support HRA has been completed and submitted to the Norfolk Boreas Examination. Relevant documents are:
 - Assessment of Additional Mitigation in the Haisborough, Hammond and Winterton Special Area of Conservation (Version 2) [REP6-019];
 - Offshore Ornithology Assessment Update [REP2-035];
 - Offshore Ornithology Assessment Update - Project Alone Collision Risk Modelling [REP7-030]; and
 - Clarification Note Trenchless Crossings and Potential Effects of Breakout on the River Wensum [REP1-039].
3. The Examining Authority (ExA) with the support of the Planning Inspectorate Environmental Services Team provided the Report on the Implications for European Sites (RIES) on the 7 April 2020. The Applicant has reviewed the RIES and sections 2 to 8 of this document provide the Applicant's comments on the RIES.
4. The Applicant notes that the RIES reflects information provided to the Examination up to Deadline 7 and that the Applicant has continued to work with NE, RSPB and the MMO with the aim of progressing outstanding matters in relation to the HRA. NE provided comment on the updated Screening and Integrity Matrices which the Applicant respond to within this document.
5. The following additional information was submitted by the Applicant on 8th April 2020 at Deadline 8 which is of relevance to the Integrity Matrices and the Applicant has included specific reference to these in Section 8 where applicable:
 - Offshore Ornithology Assessment Update Cumulative and In-combination Collision Risk Modelling (Version 2) [REP8-025]; and
 - Combined Response to Natural England's Offshore Ornithology Submissions [REP8-027].
6. Norfolk Boreas is being developed alongside the Norfolk Vanguard project. If both projects are constructed, they would, because of their location, have similar impacts

as a result of their strategic development and shared cable corridor. Accordingly, the Applicant, jointly with Norfolk Vanguard, has undertaken consultation with Natural England and the MMO in relation to HRA and potential mitigation measures.

2 Applicant's Response on the RIES Overview

7. Table 1 provides the Applicant's response on section 2 of the RIES.

Table 1 Applicant's Response on Section 2 of the RIES

Paragraph	Applicant's Response
European Sites Considered	
2.3.1	The Applicant would like to note that in addition to the in-combination assessments listed, in-combination assessment was also presented in APP-201 for: <ul style="list-style-type: none"> • Displacement of guillemot from the Flamborough and Filey Coast SPA • Displacement of razorbill from the Flamborough and Filey Coast SPA
2.3.5	The Applicant would like to note that as a result of consultation with Natural England, additional assessment to supplement the Information to support HRA has been completed and submitted to the Norfolk Boreas Examination. The Assessment of Additional Mitigation in the Haisborough, Hammond and Winterton Special Area of Conservation (Version 2) [REP6-019] was submitted at Deadline 6 of the Examination. This concluded that there would be no AEoI as a result of habitat loss due to the placement of cable protection within the HHW SAC.
2.3.6	The Applicant agrees with the text in paragraphs 2.3.6 and 2.3.7 and also notes that the conclusion of the in-combination assessment for Paston Great Barn SAC cited in section 9.16 of the RIES concluded that no adverse effect on the integrity of the Paston Great Barn SAC in relation to the conservation objectives for barbastelle is anticipated due to in-combination effects.
2.5.1	The Applicant agrees with the key HRA matters listed in section 2.5, and notes that 'collision risk to non-seabird migrants' listed in paragraph 2.5.1 is considered within Section 6 of the Information to Support Habitats Regulations Assessment [APP-201], whereas the other onshore SAC / SPA issues are considered within Section 9.
2.6.2	The correct reference at the end of this paragraph should be to section 4 of the RIES.

3 Applicant's Response on the RIES Stage 1: Likely Significant Effects (Section 3)

8. Table 2 provides the Applicant's response on Section 3 of the RIES.

Table 2 Applicant's Response on Section 3 of the REIS

Paragraph	Applicant's Response
3.1 The Applicant's Assessment	
Table 3.1	The Applicant notes that in addition to the potential impacts listed for gannet from the Flamborough and Filey Coast SPA the combined effects of both collision mortality and displacement mortality have been assessed.
Table 3.1	The Applicant would like to note that as identified in section 3.2 of the RIES the Applicant has not screened in effects of increased suspended sediment on sandbanks. The Applicant also did not initially screen in habitat loss on <i>S.spinulosa</i> reef. Following consultation with Natural England the Applicant maintains its position that <i>S.spinulosa</i> would not suffer a loss of habitat due to the fact that it would colonise cable protection. However, the Applicant recognises that this is not the opinion of Natural England and therefore has

Paragraph	Applicant's Response
	<p>provided assessment of this impact at Deadline 6 [REP6-019]. Further information on the Applicant's position on the possible effects of increased suspended sediment on Annex I sandbanks is provided in line 3.2.1 below.</p>
<p>3.2 Haisborough, Hammond and Winterton SAC</p>	
<p>Increased suspended sediment and smothering of Annex I</p>	
<p>3.2.1</p>	<p>The Applicant notes that Natural England submitted their response to the updated Habitat Regulations Assessment Screening and Integrity Matrices at Deadline 7 [REP7-050]. This response states that increased suspended sediment and smothering of sandbanks should be screened into the Assessment.</p> <p>The potential effects assessed within the Information to Support HRA were agreed with Natural England through the Evidence Plan process. During Natural England's review of the draft Information to Support HRA (in March and April 2019) Natural England did not inform the Applicant that they disagreed that effects on sandbanks due to increased suspended sediment could be screened out. The Applicant also note that this effect was screened out for Norfolk Vanguard (see Appendix 3 of the Norfolk Vanguard RIES) and this was not disputed during the Norfolk Vanguard Examination. The Norfolk Boreas project would, in a worst case scenario have a similar effect on increased suspended sediment as Norfolk Vanguard. It is therefore unfortunate that despite having had ample opportunity to raise this point Natural England have only done so towards the end of the Norfolk Boreas Examination.</p> <p>The Applicant understands that Natural England's new position on this matter may be due to the evolution of their position that the site has no site fabric and therefore the sandbanks and the troughs all contain supporting communities (see page 8 of Natural England's Written Summary of Oral Representations made at Issue Specific Hearing 4 on offshore effects including the Draft Development Consent Order [REP4-043]). The Applicant's response to Natural England's request to screen in this effect is set out below.</p> <p>The effects of increased suspended sediment within the offshore cable corridor were assessed in section 8.7.6.5 of the Environmental Statement (ES)[APP-221] which concluded that <i>"effects on suspended sediment concentrations due to export cable installation (including that from any sand wave levelling) within the offshore cable corridor would have no impact upon the identified receptors groups for marine physical processes. This is because the receptors are dominated by processes that are active along the seabed and are not affected by sediment suspended in the water column"</i>. sandbanks within the HHW SAC were identified as one of the receptors.</p> <p>Changes in seabed level due to deposition from the suspended sediment plume during export cable installation within the offshore cable corridor were assessed in section 8.7.6.6 of the ES [APP-221] which identified that the theoretical bed level changes of between 0.2mm and up to 0.8mm would be predicted. Up to 2mm could occur within inshore locations however these would be outside of the HHW SAC. Therefore, deposition of material would not cause a detectable change in the sandbanks.</p> <p>Based on these findings the Applicant considers that it is entirely appropriate to screen out the effects of increased suspended sediment on sandbanks.</p> <p>Should the ExA not agree with the Applicant and consider that increase in suspended sediment and smothering should not be screened out the Applicant would consider that AEol can be ruled out and the Applicant's justification for this is provided in section 8.3, row (j).</p>

Paragraph	Applicant's Response
	In summary the Applicant maintains that increased suspended sediment and smothering should remain screened out, however, if it is determined that it should be screened in, AEoI can be ruled out for the reasons provided in section 8.3, row (j).
3.3. Breydon Water SPA and Ramsar, Broadland SPA and Ramsar and North Norfolk Coast SPA and Ramsar	
Collision risk of non-seabird migrants	
3.3.1	Breydon Water SPA and Ramsar was not included in the original onshore screening [APP-203] however it was considered in the offshore screening document [APP-204], where LSE was ruled out and hence assessment of the potential effects of the project on this site was not undertaken and therefore not included in the original integrity matrices [APP-205]. However, following consideration of the assessment conducted by Norfolk Vanguard Ltd (which included this site) the site was subsequently included with respect to non-seabird migrant collision risk in the updated offshore screening [AS-002] and the site was screened in on the basis that LSE could not be ruled out. This site had already been assessed for collision risk [APP-566, annex 7: Migrant non-seabird collision risk modelling]. Consequently the site was included in the updated integrity matrices [AS-004] where adverse effects on integrity (AEoI) of this site were ruled out.
3.4 Broadland SPA and Ramsar	
Effects on ex-situ habitats and foraging swans and geese	
3.4.1	The Applicant agrees that the summary of the approach to screening as described within paragraphs 3.4.1 – 3.4.3 is accurate.
3.4.2	
3.4.3	
3.5 Flamborough and Filey Coast SPA	
Seabird assemblage – collision risk	
3.5.3	The Applicant also notes that an assessment of the potential effects on the assemblage feature was included in REP2-035 which concluded there would be no AEoI for this site due to the project alone or in-combination with other plans or projects . Natural England agreed with this conclusion for the project alone and in-combination (when Hornsea Project Three and Hornsea Project Four are excluded) [REP4-040].
3.6 Greater Wash SPA	
Common scoter – construction phase displacement/disturbance	
3.6.1	The Applicant agrees that the summary of the approach to screening as described within paragraphs 3.6.1 – 3.6.2 is accurate.
3.6.2	
3.7 River Wensum SAC	
Drilling fluid breakout	
3.7.1	The Applicant agrees that the summary of the approach to screening as described within paragraphs 3.7.1 – 3.7.4 is accurate.
3.7.2	
3.7.3	
3.7.4	The Applicant notes that Natural England [REP7-050] has welcomed that the River Wensum SAC designated features, Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation and Desmoulin's whorl snail, have now been screened in for direct effects, due to the potential for HHD Drilling mud outbreaks.
Air quality	
3.7.5	The Applicant agrees that the summary of the approach to screening as

Paragraph	Applicant's Response
3.7.6	described within paragraphs 3.7.5 – 3.7.7 is accurate.
3.7.7	
3.8 Summary of screening outcomes during Examination	
Table 3.2	<p>The Applicant maintains that LSE can be ruled out for the River Wensum SAC because of the commitment to HDD under the Wensum, however it was screened in on the advice of Natural England.</p> <p>The Applicant maintains that LSE can be ruled out for the effects on the ex-situ habitats of the Broadland SPA / Ramsar site based on the findings of the ornithological survey data collected, however it was screened in on the advice of Natural England.</p> <p>In response to footnote 8 this feature was retained in error in REP6-006 and REP6-007, however it should be noted that this does not materially affect the assessment for this site.</p> <p>In response to footnote 9, this SPA was omitted from the updated screening document in error. However, as noted this SPA was included in the assessment and is included in the integrity matrices [REP6-007].</p> <p>In response to footnote 10 of the RIES, as noted in NE's comments on the updated screening and integrity matrices [REP7-050], pink-footed goose is included on the Second SPA Review (Stroud et al., 2001) and is listed as 'not yet classified' for the SPA in the Third SPA Review (Stroud et al. 2016). Furthermore, the species is listed as a 'Species/populations identified subsequent to designation for possible future consideration under criterion 6' on the Ramsar Information Sheet for the site (JNCC, 2008). Under a precautionary approach, it has therefore been included within the assessment.</p> <p>Similarly, in response to footnote 11 of the RIES, greylag goose is listed as a 'Species/populations identified subsequent to designation for possible future consideration under criterion 6' on the Ramsar Information Sheet for the site (JNCC, 2008). Under a precautionary approach, it has therefore been included within the assessment.</p>
3.9 Conclusion of Screening (Stage 1) assessment	
3.9.2	See the Applicant's comments on 3.2.1 above.
3.9.3	<p>See the Applicant's comments on 3.2.1 above.</p> <p>The Applicant notes the ExA's comments regarding air quality effects not being included within the screening integrity matrices. A response was provided (see RIES paragraphs 3.7.3-3.7.5) to NE's queries regarding assessment of air quality. Following the Applicant's response [AS-024], NE confirmed that it agreed that there will be no LSE on designated sites from air quality impacts [REP5-077]. This is consistent with the approach to consideration of indirect effects upon the River Wensum SAC within the most recent version of the screening matrices [REP6-008].</p> <p>No further comments on the assessment of the River Wensum SAC were raised by NE in their response to the updated Habitat Regulations Assessment Screening and Integrity Matrices [REP7-050].</p> <p>The Applicant notes that Broadland SPA and Ramsar was erroneously omitted from the screening matrices [REP6-006] however this site was included in an earlier version [AS—002] and as noted by the ExA this site has</p>

Paragraph	Applicant's Response
	been included in the integrity matrices [REP6-007]. All parties are agreed that there is no risk of AEoI for this site, however for completeness an updated version (from that provided at Deadline 1 [REP1-013]) has been provided in Appendix 1 of this document.
3.9.4	See the Applicant's comments on Table 3.2 above. The errors in the listed features for Broadland SPA and Ramsar in the screening matrices notwithstanding (now rectified in Appendix 1 of this document), the Applicant notes that the project's Habitat Regulations Assessment [APP-201, REP2-035, REP6-024 and REP7-030] and integrity matrices [REP6-007] include assessment of all the features which have been agreed as requiring assessment with Natural England.
3.9.5	The Applicant notes Natural England [REP7-050] has provided comments on the sites and features screened in [REP6-006]. Where these have not already been discussed above the following comments are provided: <u>Coquet Island SPA</u> The Applicant notes Natural England's comment with respect to the potential for a low level of nonbreeding season connectivity between species included in the assemblage feature for this SPA and the project. However, as noted by Natural England, this has no material effect on the assessment and therefore the Applicant does not propose to provide an update to the screening matrix for this site. <u>Farne Islands SPA</u> The Applicant notes Natural England's comments with respect to the inclusion of guillemot, roseate tern and the seabird assemblage in the list of features and the potential for a low level of nonbreeding season connectivity between species included in the assemblage feature for this SPA and the project. However as this has no material effect on the SPAs or features to be included in the assessment the Applicant does not propose to provide an update to the screening matrix for this site. Furthermore, the Applicant considers that since this site is almost 400km from the project the likelihood of connectivity means that the potential for an impact pathway in the nonbreeding season is no greater than that for other SPAs which border the North Sea and are located at similar or greater distances from the project and for which it is clear that connectivity is so low that assessment is not warranted.

4 Applicant's Response on the RIES Stage 2: Adverse Effects on Integrity (Section 4)

9. The Applicant notes that further details are provided in the relevant integrity matrices (Annex 3 of this RIES) and the Applicant provides responses to these in section 8 of this document.
10. Table 3 provides the Applicant's response on Section 3 of the RIES.

Table 3 Applicant's Response on Section 4 of the REIS - Adverse Effects on Integrity

Paragraph	Applicant's Response
4.1 The Applicant's Assessment	
4.5.9	In response to the ExA's query in footnote 12, the Applicant confirms that in Requirement 25 of the draft DCO, the word 'scheme' refers to 'the design of each watercourse crossing,

Paragraph	Applicant's Response
	diversion and reinstatement', and the word 'programme' refers to 'the timeframes for implementation of each watercourse crossing, diversion and reinstatement'.
4.5.13	To clarify, the updated OCoCP text [section 11.1.2 of REP1-019] states that 'where possible the HDD compound within the River Wensum floodplain will be restored to the current soil/ground moisture conditions so that water levels are similar to those pre-disturbance.'
4.6.6	To clarify, condition 19 of the DMLs for the Transmission Assets (schedules 11 and 12 of the dDCO) includes a restriction to one "main" cable laying vessel within the Greater Wash SPA during January to March inclusive.
4.7.1	<p>The Applicant would like to draw attention to the fact that following the collision mitigation measures committed, [REP7-030] which reduced collision risks by between 62% and 74%, Natural England has agreed with the Applicant that there are no risks of AEoI for the project alone for any site or feature.</p> <p>Furthermore, with the exclusion of Hornsea Project Three and Hornsea Project Four from the in-combination assessments (due to the uncertainties which Natural England has identified with the assessments for these projects), the only AEoI that Natural England has been unable to rule out are for kittiwake from the Flamborough and Filey coast SPA and lesser black-backed gull from the Alde-Ore Estuary SPA.</p>
4.8.6	<p>To clarify, the Applicant notes that the updated collision risk modelling was submitted in [REP5-059] and not in REP5-001 as stated.</p> <p>The Applicant would also like to note that the increase in minimum draught height for turbines with a capacity of up to 14.6MW is to 35m, and not to 25m as stated in the RIES.</p>
4.8.11	The Applicant would like to clarify that in [REP2-035] the Applicant stated that if the collision risk assessment was conducted with adjustment to remove the noted sources of over precaution (i.e. the differences between consented and built wind farm designs, use of evidence based nocturnal activity rates, kittiwake flight speed and avoidance rates for gannet and kittiwake) then the collision estimates would be reduced when compared with those on which the assessment was based (and as advised by Natural England). Hence, the more realistic collision estimates would be reduced to around 42% of the precautionary values for large gulls, 32% for kittiwake and 19% for gannet (i.e. for gannet the realistic, evidence based, values are less than one fifth of the precautionary ones).
4.8.31	The Applicant presented estimates of how the reduced kittiwake flight speed would affect the collision estimates in [REP8-027]. The collision estimates would be reduced by 9% to 11.5% (depending on the flight speed used, see REP8-27 for details) compared with those obtained using the higher flight speed advised by Natural England and on which the assessment is based. Natural England provided comments on the Applicant's review (REP7-048) and, in acknowledgment of the uncertainty regarding kittiwake flight speed and that the Applicant's review indicated the current rate was likely to be an overestimate, suggested that the Applicant could present collision estimates obtained using the revised flight speed alongside those using the current (standard) rate. The Applicant does not intend to submit further collision risk modelling, however, as noted above, taking account of this evidence based adjustment would reduce the collision estimates for this species by around 10%, and importantly this would apply to the estimates for all other wind farms which have used the higher estimate (which to the Applicant's knowledge is likely to include the majority of those included in the in-combination assessment).
4.8.33	The Applicant notes that although it strongly disagrees with Natural England's assumption that up to 100% of the kittiwakes recorded on the Norfolk Boreas site in the extended breeding season are adults from the Flamborough and Filey Coast SPA (and that assessment should be based on a value of 86%), and considers that a figure of 26% is appropriate on the basis of the available evidence, the assessment has presented the full range as requested.
4.8.48	The Applicant notes that Natural England has to date not provided a response to the Applicant's point that while individual elements of precaution may be justified (to a greater

Paragraph	Applicant's Response
	or lesser extent) the combination of these in the overall assessment leads to final conclusions which are highly over precautionary.
4.8.51	The Applicant provided comparison of the outputs from the PVA tool for 500 simulations using the original version of the PVA with runs of 1,000 and 5,000 simulations using the updated version of the PVA [REP7-031], as requested by Natural England, and these have demonstrated that the outputs in [REP2-035] are unaffected by either the updates to the PVA or the additional simulations. Therefore, the Applicant does not consider there to be any requirement to re-run the PVA with the updated version of the NE tool.
4.9.2 to 4.9.9	<p>Please see the Applicant's Comments on Responses to the Examining Authority's Third Round of Written Questions [REP8-015], in particular the comments on responses to Q3.5.5.5.</p> <p>The Applicant is emphatically not proposing to defer an Appropriate Assessment through the use of a Grampian condition. A full Information to support Habitats Regulations Assessment (HRA) Report has been provided with the application [APP-201] which concludes, with no reliance on the Grampian condition, that there is no adverse effect on integrity (AEoI). Whilst it is correct that the final number and precise route of the cable has yet to be determined, the HRA has been undertaken on the basis of a worst case scenario.</p> <p>In the event that it was considered necessary to undertake a further Appropriate Assessment at the point of discharge of the condition (if, for example, the position had significantly changed from that previously assessed – which the Applicant considers is unlikely to be the case for reasons previously stated), the MMO as the regulatory body for marine activities would be the competent authority and therefore the appropriate body to conduct such an assessment.</p> <p>This is no different to the MMO's role in undertaking any other Appropriate Assessment which is required before arriving at any determination (i.e. the grant of a Marine Licence) which may have an adverse effect on the integrity of a European site. Accordingly, the Applicant fails to understand why the MMO should be reluctant to undertake what is an integral and usual part of its role as regulator of marine activities.</p> <p>Further detail on the Applicant's position is provided in [REP8-015], in particular at comments on responses to Q3.5.5.5.</p>

5 Applicant's Response on the RIES Alternatives, Compensation and IROPI (Section 5)

- The Applicant agrees that this section accurately represents the position of the interested parties with regards to Alternatives, Compensation and IROPI and has no further comments.

6 Applicant's Response on Annex 1 of the RIES

- The Applicant agrees with the information provided in Annex 1 of the RIES and has no further comments.

7 Applicant's Response on Annex 2 of the RIES – Summary of Positions

- This section provides the Applicant's comments on Annex 2 of the RIES - Summary of positions in relation to adverse effects on integrity. Tables 4 to 7 provide comments on SPAs, Benthic SACs, Marine Mammal SACs and Terrestrial SACs respectively. In this section the Applicant only provides comments on its understanding of the

positions of the IPs; section 8 provides the Applicant's comments on the content of the integrity matrices and conclusions on AEoI.

7.1 SPA / Ramsar sites (ornithology)

Table 4 Applicant's Response on summary of positions in relation SPA / Ramsar sites (Ornithology)

European site	Feature	Applicant's Response
Alde-Ore Estuary SPA and Ramsar	LBBG (breeding)	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties. However it should be noted that due to resource constraints the RSPB has been unable to review the project updates since Deadline 5, which included a 64% reduction in predicted collision risks to a maximum of 2 individuals [REP5-059].
Outer Thames Estuary SPA	RTD (non-breeding)	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
Flamborough & Filey Coast (FFC) SPA	Gannet (breeding); Kittiwake (breeding); Guillemot (breeding); Razorbill (breeding); and Seabird assemblage	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties. However it should be noted that due to resource constraints the RSPB has been unable to review the project updates since Deadline 5, which included a 72% (kittiwake) and 74% (gannet) reduction in collision risks, to maxima of 14 and 15 respectively [REP5-059].
Greater Wash SPA	RTD (non-breeding) Little gull (non-breeding) Common scoter	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
Breydon Water SPA and Ramsar	Bewick's swan Pied avocet European golden plover Ruff Lapwing Black-tailed godwit Shoveler Wigeon White-fronted goose Cormorant Waterfowl assemblage	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
Broadland SPA and Ramsar	Great bittern Eurasian marsh harrier Ruff Gadwall Northern shoveler Eurasian wigeon Hen harrier Wildfowl assemblage Bewick's swan Whooper Swan Tundra Swan Pink-footed goose Greylag goose	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
North Norfolk Coast SPA and Ramsar	Pied avocet Great bittern Common tern	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.

European site	Feature	Applicant's Response
	Little tern Eurasian marsh harrier Montagu's harrier Sandwich tern Dark-bellied brent goose Red knot Pink-footed goose Eurasian wigeon Bar-tailed godwit Pintail Assemblage	

7.2 Benthic SACs

Table 5 Applicant's Response on summary of positions in relation to the Haisborough, Hammond and Winterton SAC (Benthic)

Feature	Impact	Applicant's Response
Sandbanks slightly covered by seawater at all times	Temporary physical disturbance; and Permanent habitat loss	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
	Introduction of new substrate	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
	Smothering due to increased suspended sediment	<p>The potential effects assessed within the Information to Support HRA were agreed with Natural England through the Evidence Plan process. During Natural England's review of the draft Information to Support HRA Natural England did not inform the Applicant that they disagreed that effects on sandbanks due to increased suspended sediment could be screened out. The Applicant also notes that Natural England agreed to screen out this effect for Norfolk Vanguard (see Appendix 3 of the Norfolk Vanguard RIES).</p> <p>The Applicant understands that Natural England's new position on this matter may be due to the evolution of their position that the site has no site fabric and therefore the sandbanks and the troughs all contain supporting communities (see page 8 of Natural England's Written Summary of Oral Representations made at Issue Specific Hearing 4 on offshore effects including the Draft Development Consent Order [REP4-043]). The Applicant recognises that Natural England's submission [REP7-050] states that they now consider that this effect should have been screened in and the Applicant has responded to this in section 3, Table 2 of this document.</p>
Reef	Temporary physical disturbance	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
	Permanent habitat loss	
	Introduction of new substrate	As stated above the potential effects assessed within the Information to Support HRA were agreed with Natural

Feature	Impact	Applicant's Response
		<p>England through the Evidence Plan process. Although the Applicant is aware that Natural England do not agree that the impacts of habitat loss due to the installation of cable protection would not result in AEoI it is not aware of any disagreement by Natural England with the conclusion as presented in the Information to Support HRA [APP-201] that introduced substrate would not result in an AEoI. For further information on the Applicant's position please see section 8.3 Table 10 line 'h'.</p> <p>The Applicant notes Natural England's comment at Deadline 7 [REP7-050], that <i>any maintenance activities of cables would then occur during the operational phase. We note that the Applicant has tried to address this concern by having an 'introduction of new substrate' column, but the HRA should reflect the above point.</i></p> <p>The Applicant considers that, as presented in the Integrity matrices, the introduction of new substrate should be assessed as a separate effect to that of habitat loss as new substrate has the potential to cause a number of effects such as supporting species and benthic communities that would otherwise have not been able to establish in that location) and hence it is included with the Information to Support HRA report. The Applicant also considers both habitat loss and introduction of new substrate caused by the placement of cable protection as an operational impact as it would extend over the operational period of the project and would not be limited to construction or decommissioning.</p> <p>The maintenance activities of cables Natural England mention would occur during the operational phase and is assessed within temporary physical disturbance during operation (sections 7.4.1.1.2 and 7.4.2.1.2 of the Information to Support HRA Report, APP-201).</p> <p>Therefore the Applicant maintains that all effects are assessed within the information to Support HRA Report (and the Assessment of Additional Mitigation in the Haisborough, Hammond and Winterton Special Area of Conservation (Version 2) [REP6-019] which was completed at the request of Natural England and can be considered to supplement the Information to Support HRA Report, APP-201) and that the Integrity Matrices submitted at Deadline 6 [REP6-011] reflect these assessments.</p>
	Smothering due to increased suspended sediment	<p>The Applicant has ruled out AEoI due to the mitigation of not disposing of sediment within 50m of Annex I <i>S.spinulosa</i> reef. Whilst Natural England questioned whether a 50m buffer was sufficient, the Applicant made an additional commitment to dispose of material within the HHW SAC using a fall pipe to ensure accuracy of the disposal operations. The Applicant understands that Natural England welcomes this additional mitigation and is not aware of any areas of disagreement regarding the potential effects of smothering due to increased suspended sediment.</p>

7.3 Marine Mammal sites SACs

Table 6 Applicant's Response on summary of positions in relation to SAC sites (Marine Mammals)

European site	Feature	Applicant's Response
Southern North Sea SAC	Harbour porpoise	The Applicant agrees that the conclusions presented with regards to TWT and WDC are accurate. The Applicant notes that Natural England confirm that the only outstanding issue with the SNS SAC SIP was the lack of sight of the mechanism to ensure in combination impacts would be appropriately managed to ensure they remain within the site thresholds [REP7-050] and that in the MMO's response to Q3.8.2.1 they provide an update on the good progress being made on how this will be managed [REP7-040].
Humber Estuary SAC	Grey seal	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
The Wash and North Norfolk Coast SAC	Harbour seal Grey seal	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
Winterton-Horsey Dunes SAC	Grey seal	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.

7.4 Terrestrial SACs

Table 7 Applicant's Response on summary of positions in relation to terrestrial SAC sites

European site	Applicant's Response
River Wensum SAC	The Applicant considers that the conclusions presented accurately reflect the positions of the relevant parties.
Paston Great Barn SAC	
Norfolk Valley Fens SAC	
The Broads SAC	

8 Applicant's Response on Annex 3 of the RIES – Integrity matrices

14. Within this section the Applicant provides its comments on the four integrity matrices presented in Annex 3.

8.1 Alde-Ore Estuary SPA and Ramsar

Table 8 Applicant's Response on Integrity Matrix 1 (? = Areas identified in the RIES regarding disagreement between Interested Parties and the Applicant that a LSE can be excluded, or AEol can be ruled out)

Paragraph	Applicant's Response
a (?)	Lesser black-backed gull collision mortality (project alone)
	The Applicant agrees with the notes provided. However the Applicant also notes that Natural England does not agree with the RSPB's position that breeding season connectivity should be 40%, and furthermore has stated that even 30% (Natural England's preferred apportioning rate) is likely to be precautionary: <i>considering the apportionment of LBBG collisions to the Alde-Ore Estuary SPA from Norfolk Boreas alone using a precautionary upper apportioning rate in the breeding season of 30%</i> [REP4-040].

Paragraph	Applicant's Response
	The Applicant notes that even allowing for the RSPB's highly precautionary assumption that up to 40% of the collisions in the breeding season (6.2) could be birds from the Alde-Ore Estuary SPA, this would only add 0.6 collisions per year to the Natural England breeding season estimate of 1.9 (i.e. once the spring and autumn SPA mortality of 0.2 is included the total annual mortality apportioned to the SPA applying the RSPB's approach would be 2.7 individuals) which would not make a material difference to the assessment conclusion that there is no risk of an AEoI due to collisions at the project alone.
b (?)	Lesser black-backed gull collision mortality (in-combination)
	The Applicant agrees with the notes provided. However, the Applicant also considers that the RSPB has presented the outputs from the counterfactuals of population size (CPS) generated by the PVA models in a manner which differs slightly from that which the Applicant considers appropriate (and which Natural England has confirmed is also their interpretation [REP4-043]). The Applicant and Natural England consider that the CPS is a measure of how much smaller the impacted population size will be compared to the unimpacted population <i>at the end of the projection period</i> . Therefore, the Applicant considers that describing this as a 'reduction' in population size as the RSPB has done [REP2-096] risks the inference that the impact will reduce the population size relative to the current size, which is not the case. In fact both impacted and unimpacted population sizes could increase or decrease and the CPS is a measure of the difference between the two (this is also discussed in [REP4-014]).

8.2 Flamborough and Filey Coast SPA

Table 9 Applicant's Response on Integrity Matrix 2 (? = Areas identified in the RIES regarding disagreement between Interested Parties and the Applicant that a LSE can be excluded, or no information provided for the feature/impact)

Paragraph	Applicant's Response
a	Kittiwake collision mortality (project alone)
	The Applicant agrees with the notes provided.
b (?)	Kittiwake collision mortality (in-combination)
	The Applicant agrees with the notes provided. However, the Applicant also considers that the RSPB has presented the outputs from the counterfactuals of population size generated by the PVA models in a manner which differs slightly from that which the Applicant considers appropriate (and which Natural England has confirmed is also their interpretation [REP4-043]). The Applicant and Natural England consider that the CPS is a measure of how much smaller the impacted population size will be compared to the unimpacted population <i>at the end of the projection period</i> . Therefore, the Applicant considers that describing this as a 'reduction' in population size as the RSPB has done [REP2-096] risks the inference that the impact will reduce the population size relative to the current size, which is not the case. In fact both impacted and unimpacted population sizes could increase or decrease and the CPS is a measure of the difference between the two (this is also discussed in [REP4-014]).
c (?)	Gannet collision mortality (project alone)
	The Applicant agrees with the notes provided. However, the Applicant also considers that the RSPB has presented the outputs from the counterfactuals of population size generated by the PVA models in a manner which differs slightly from that which the Applicant considers appropriate (and which Natural England has confirmed is also their interpretation [REP4-043]). The Applicant and Natural England consider that the CPS is a measure of how much smaller the impacted population size will be compared to the unimpacted population at the end of the projection period. Therefore, the Applicant considers that describing this as a 'reduction' in population size as the RSPB has done [REP2-096] risks the inference that the impact will reduce the population size relative to the current size, which is not the case. In

Paragraph	Applicant's Response
	<p>fact both impacted and unimpacted population sizes could increase or decrease and the CPS is a measure of the difference between the two.</p> <p>In addition, the RSPB's position stated in this paragraph [REP2-069] was made in reference to the impact magnitude in the original submission [APP-201], which has been very substantially reduced (by 74%) following design mitigations to reduce collision risk [REP5—059]. The RSPB's estimate that the CPS value would be 18% (i.e. that the impacted population would be 18% smaller than the unimpacted size after 30 years) would now be reduced to no more than 3.2%, notwithstanding the above consideration this this is also not an indication of a reduction in population size. Furthermore, this is based on the RSPB's position that in the breeding season the gannet collision avoidance rate should be 98% rather than the rate of 98.9% used by the Applicant and as advised by Natural England.</p>
d (?)	Gannet collision mortality (in-combination)
	<p>The Applicant agrees with the notes provided. However, the Applicant also considers that the RSPB has presented the outputs from the counterfactuals of population size generated by the PVA models in a manner which differs slightly from that which the Applicant considers appropriate (and which Natural England has confirmed is also their interpretation [REP4-043]). The Applicant and Natural England consider that the CPS is a measure of how much smaller the impacted population size will be compared to the unimpacted population at the end of the projection period. Therefore, the Applicant considers that describing this as a 'reduction' in population size as the RSPB has done [REP2-096] risks the inference that the impact will reduce the population size relative to the current size, which is not the case. In fact both impacted and unimpacted population sizes could increase or decrease and the CPS is a measure of the difference between the two.</p> <p>In addition, the RSPB's position is based on the use of a breeding season gannet collision avoidance rate of 98% rather than the rate of 98.9% used by the Applicant and as advised by Natural England.</p>
e (?)	Gannet displacement (project alone)
	The Applicant agrees with the notes provided.
f (?)	Gannet displacement (in-combination)
	The Applicant agrees with the notes provided.
g	Gannet combined displacement and collision mortality (project alone)
	The Applicant agrees with the notes provided.
h (?)	Gannet combined displacement and collision mortality (in-combination)
	The Applicant agrees with the notes provided.
i	In-combination effects
	The Applicant agrees with the notes provided.
j	Razorbill operational displacement (project alone)
	The Applicant agrees with the notes provided.
k	Razorbill operational displacement (in-combination)
	The Applicant agrees with the notes provided. However, the Applicant notes that the RSPB's position is based on the in-combination total including both Hornsea Project Three and Hornsea Project Four and the most precautionary combination of displacement parameters (70% displaced and 10% mortality). As noted, Natural England considers that a mortality rate as high as 10% is unlikely and that on this basis Natural England was able to conclude there was no risk of an AEoI in-combination with other plans and projects when Hornsea Projects Three and Four are excluded.
l	Guillemot operational displacement (project alone)
	The Applicant agrees with the notes provided.
m (?)	Guillemot operational displacement (in-combination)

Paragraph	Applicant's Response
	The Applicant agrees with the notes provided. However, the Applicant notes that the RSPB's position is based on the in-combination total which includes both Hornsea Project Three and Hornsea Project Four and the most precautionary combination of displacement parameters (70% displaced and 10% mortality). As noted, Natural England considers that a mortality rate as high as 10% is unlikely and on this basis Natural England was able to conclude there was no risk of an AEoI in-combination with other plans and projects when Hornsea Projects Three and Four are excluded.
n	Seabird assemblage collision mortality and operational displacement (project alone)
	The Applicant agrees with the notes provided.
m	Seabird assemblage collision mortality and operational displacement (in-combination)
	The Applicant agrees with the notes provided.

8.3 Haisborough Hammond and Winterton SAC

Table 10 Applicant's Response on Integrity Matrix 4 (? = Areas identified in the RIES regarding disagreement between Interested Parties and the Applicant that a LSE can be excluded, or no information provided for the feature/impact)

Paragraph	Applicant's Response
a (?)	Temporary physical disturbance during construction - sandbanks
	<p>The Applicant maintains that there would be no adverse effect on the form and function of the sandbanks as a result of the temporary construction works, including sandwave levelling and sediment disposal, based on the worst case scenario assessed in the Information to Support HRA Report (document 5.3).</p> <p>In response to NE's advice that removing material would affect the structure of the Annex I sandbanks and potentially change sediment extent and distribution and/or result in a change to biological composition [RR-099] the Applicant made the following additional commitments to promote recovery of sandbanks (all secured through section 5.4.1 if the outline SIP [REP1-034] or section 4.4.1 of the outline CSIMP [REP6-017]):</p> <ul style="list-style-type: none"> • Dispose of any material dredged from the seabed for sandwave levelling (also referred to as pre-sweeping) in a linear "strip" along the cable route. • Dispose of material close to the seabed. This will be achieved through the use of fall pipe (also referred to as a down pipe) employed by the dredging vessel; and • Dispose of material up drift of the cable route, to allow infill to occur as quickly as possible following cable installation. <p>The Applicant included reference to these commitments in the updated integrity matrices submitted at Deadline 6 [REP6-008] and consider that these should be included as references under 'a'.</p> <p><i>Monitoring</i></p> <p>NE comment that "it noted that there is no mention of a specific pre-construction survey". The Applicant considers that this is incorrect. The In Principle Monitoring Plan (Table 4.1) commits the Applicant to "undertake a single [Pre-construction] survey within the agreed array and cable corridor survey areas using full sea floor coverage swath-bathymetric undertaken to IHO S44ed5 Order 1a standard and side-scan surveys of the area(s) within the order limits in which it is proposed to carry out construction works, including a 500m buffer area around the site of each works. (The "site of each works" being the area within the order limits which is actually taken forwards to construction noting that it is possible that certain areas within the order limits may not be developed)." This should be acknowledged.</p> <p>The Applicant also considers that the NE position that there is "no mention of timeframes for the post-construction survey" is also incorrect as the IPMP does commit the Applicant to</p>

Paragraph	Applicant's Response
	<p>undertake further post construction surveys at intervals to be agreed with the MMO (e.g. 1, 3 and 6 years or 1, 5 and 10 years) if it is determined that this is required. The Applicant maintains that these surveys, in addition to the commitment to undertake the initial post-construction survey secured in the DCO, would be sufficient to appropriately monitor the ability of sandbanks to recover.</p>
b (?)	<p>Temporary physical disturbance during construction - reefs</p>
	<p>For the reasons stated in section 2.1.1 of the Applicant's position paper on the HHW SAC [REP5-057] the Applicant considers that a hypothetical worst case scenario whereby Annex I <i>S.spinulosa</i> reef spans the entire offshore cable is highly unlikely to occur. This is because the current levels of fishing in the Areas to be managed as <i>S.spinulosa</i> reef are very low or non-existent and therefore management measures restricting fishing activity will not result in an overall change in the extent of Annex I reef.</p> <p><i>Micrositing of export cable</i></p> <p>The second bullet point under <i>Micrositing of export cable</i> is currently incorrect; it is the larger Priority area which is shown in dark purple on Figure 1 of [REP4-022] and not the Defra Byelaw area. The Byelaw area is designed to protect this priority area, however the Byelaw area is much larger than the priority area (in which Natural England have higher confidence in recovery). Furthermore, it is the Priority area (within which NE have higher confidence of recovery) that the Applicant have acknowledged spans the corridor.</p> <p>It is stated by Natural England that the concept of <i>de minimis</i> is not found in the relevant law or guidance. However Natural England guidance on small scale impacts [REP1-057] states the following:</p> <p><i>Whilst there are no hard and fast rules or thresholds, in order for Natural England to advise that there is no likelihood of an adverse effect the project would need to demonstrate the following:</i></p> <ol style="list-style-type: none"> 1) 2) 3) <i>That the scale of loss is so small as to be de minimus alone and/ or</i> <p>This should be acknowledged.</p> <p>NE have highlighted Triton Knoll Offshore Wind Farm as an example of where micro-siting has not been possible. However, from discussions with the Triton Knoll undertaker, the Applicant understands that the Triton Knoll pre-construction baseline survey (undertaken in 2018) did not identify any Annex 1 reef habitat within that project site, including within the Inner Dowsing Race Bank and North Ridge SAC, and therefore that micro-siting to avoid Annex 1 reef was not required. The Applicant understands that the pre-construction plans for Triton Knoll have been discharged by the MMO and NE on this basis.</p> <p><i>Reef recovery</i></p> <p>NE's assertion that the Information to support HRA only refers to recovery of individuals rather than reef is incorrect. As stated in the Applicant's comments on relevant representations [AS-024] the following references, considered in the Information to Support HRA report, refer to <i>S.spinulosa</i> reef rather than (or as well as) individuals:</p> <ul style="list-style-type: none"> • Tillin and Marshall 2015; and • Holt et al 1998. <p><i>Additional comments</i></p> <p>The Applicant has also made the commitment to not dispose of dredged material within 50m of <i>S.spinulosa</i> reef. The additional commitment to using a fall pipe (secured through section</p>

Paragraph	Applicant's Response
	5.4 of the outline SIP [REP1-034] or section 4.4 of the outline CSIMP [REP6-017]) to dispose of material will allow this to be accurately applied.
c (?)	Temporary physical disturbance during operation – sandbanks and reef
	The Applicant agrees with the notes provided and highlights that the potential requirement for cable reburial during the operation and maintenance (O&M) phase of the project is likely to be dependent on the installation strategy adopted (i.e. whether sandwave levelling/pre-sweeping is used to bury the cables within the stable reference seabed level, therefore reducing or removing the likelihood that reburial will be required during O&M). The Applicant's preferred method of installation is to bury the cables to the bed reference level therefore ensuring the integrity of the cables and removing/minimising any disturbance during operation.
d (?)	Cable protection
	The Applicant agrees with the notes provided but would add the commitment to not place cable protection within the priority areas to be managed as Annex I <i>S.spinulosa</i> reef (shown in dark purple in Figure 5.1 of the SIP [REP6-012] and 4.1 in the CSIMP [REP6-017]). Noting that this commitment has been made because these are the areas which Natural England has the highest confidence that reef can recover.
e (?)	Permanent habitat loss during operation – sandbanks
	The Applicant agrees with the notes provided and would add that the Applicant is very close to signing an agreement with BT to cut disused cables therefore greatly reducing the amount of cable protection required [REP6-016] for cable crossings.
f (?)	Permanent habitat loss during operation – reefs
	<p>The Applicant wishes to clarify that, as discussed with Natural England the commitment is to, not place cable protection within the two areas which Natural England referred to as “top priority sites” within Appendix 2.2 of its Relevant Representation [RR-099]. These are the two areas presented as darker purple in Figure 5.1 of the outline HHW SIP [REP6-011] and Figure 4.1 of the outline HHW SAC CSIMP [REP6-017]. Natural England have since highlighted that these should be referred to as the areas where they have the greatest confidence that reef could recover. The Applicant has attached a caveat to this commitment stating that it will be made “unless otherwise agreed with the MMO in consultation with Natural England”. This is to allow for the fact that reef may not establish in these areas as predicted and therefore Natural England may no longer regard these as priority areas.</p> <p>Furthermore, the Applicant has only committed to not placing cable protection in priority areas to be managed as <i>S.spinulosa</i> reef as they currently stand and should the shapefiles underpinning these areas be altered by Natural England then the commitment would only relate to those areas covered by the current shapefiles. As stated above the Applicant has completed significant assessment to identify where cable protection is more likely to be required (Appendix 2 and Appendix 3 of the HHW SAC control documents [REP6-011 and REP6-017]) and therefore is able to make the commitment to avoid the currently identified areas to be managed as Annex I <i>S.spinulosa</i> reef.</p>
g	New substrate during operation – sandbanks
	The Applicant agrees with the notes provided.
h (?)	New substrate during operation – reefs
	<p>The Applicant agrees with the notes provided. The Applicant would also like to add that the large area to be managed as Annex I <i>S.spinulosa</i> reef not only has the two pipelines running through it but also has an out of service cable bisecting it (see Figure 5.1 of the SIP [REP6-012] and 4.1 in the CSIMP [REP6-017]).</p> <p>The Applicant would like to make it clear that habitat loss and the introduction of new substrate have been considered as two separate impacts and the Applicant therefore is in agreement with how these have been presented in the RIES. The introduction of new substrate could support species and communities which may not have otherwise been able</p>

Paragraph	Applicant's Response
	to establish at such a location. As the Applicant has also included an assessment of habitat loss due to the installation of cable protection [REP6-016] it would not be appropriate to attach an element of habitat reduction to the introduced new substrate effect as this would effectively be double counting (of 'f' and 'h').
i (?)	Increased suspended sediment and smothering during construction – reef
	<p>The Applicant agrees with the notes provided however, would like to clarify that it has been determined that the <u>worst case scenario</u> is that <u>up to</u> 500,000m³ of sediment could be deposited back in the SAC. The actual volume could be significantly less than this. The current wording indicates that 500,000m³ of material would be deposited.</p> <p>The Applicant also considers that NE's request for a condition which ensures that disposal material is similar to the seabed sediment is more relevant to the sandbank communities than the <i>S.spinulosa</i> reef and therefore should be included in line 'j' rather than line 'i'.</p>
j (?)	Increased suspended sediment and smothering during construction – sandbanks
	<p>As stated in section 3, Table 2, line 3.2.1, the Applicant considers that it is entirely appropriate to screen out the effects of increased suspended sediment on sandbanks. However, as stated in Table 5, the Applicant recognises that Natural England's position is now that this effect should be screened in.</p> <p>Should the ExA not agree with the Applicant and consider that increases in suspended sediment and smothering cannot be screened out, AEol can be ruled out for the following reasons:</p> <ul style="list-style-type: none"> • Any increase in suspended sediment would be small, localised and only very temporarily exceed that of normal background levels; • Deposition of this material would be limited, only changing the level of the sandbanks by between 0.2mm and up to 0.8mm; an increase which would not be detectable and therefore there would be no impact to the form of the sandbanks as a result of increased suspended sediment or smothering. <p>The Applicant recognises that Natural England's new concerns are likely to arise from possible effects on the seabed communities which may be present on and around the sandbanks. The Sandwave levelling would only occur on the sandbanks as it would not be necessary to level in the troughs. Therefore only the "Low diversity dynamic sand communities" (sub feature of the designated Sandbank feature) are of concern. With regard to these communities the Applicant considers that AEol can be ruled out for the following reasons:</p> <ul style="list-style-type: none"> • The level of smothering of any benthos would be very low (between 0.2 and 0.8mm). • Low diversity dynamic sand communities experience frequent disturbance by tidal currents, or storm events and therefore contain organisms which are adapted to recurrent disturbance (for example, polychaetes and amphipods which are able to re-burrow rapidly following disturbance) (JNCC and Natural England, 2013). • Communities found within low diversity dynamic sand are therefore largely composed of opportunistic, R-strategist species (such as <i>Nephtys cirrosa</i>, <i>Ophelia sp</i>, <i>Bathyporeia elegans</i>, <i>Gastrosaccus sp.</i> and <i>Urothoe spp.</i> which have been recorded on the sandbanks) and can re-establish relatively quickly following disturbance, usually within a few tidal cycles (JNCC and Natural England, 2013). <p>In summary the Applicant maintains that increased suspended sediment and smothering should remain screened out however, if it is determined that it should be screened in AEol can be ruled out due to the reasons stated above.</p> <p>Also see comments above at line 'i' on NE's request for a condition which ensures particle size similarity.</p>
k (?)	Decommissioning
	The Applicant agrees with the notes provided.
l (?)	In-combination effects

Paragraph	Applicant's Response
	The Applicant agrees that the notes provided accurately reflect the position of the Applicant and NE.
m (?)	In-combination effects - sandwaves
	The Applicant agrees with the notes provided.
n (?)	In-combination effects - reef
	The Applicant agrees with the notes provided.

8.4 Southern North Sea SAC

Table 11 Applicant's Response on Integrity Matrix 5 (? = Areas identified in the RIES regarding disagreement between Interested Parties and the Applicant that a LSE can be excluded, or no information provided for the feature/impact)

Paragraph	Applicant's Response
? a	Underwater noise - construction phase
	The Applicant agrees that the notes provided accurately reflect the positions of the Applicant and the interested parties and has no further comment.
b	Operation and maintenance
	The Applicant agrees with the notes provided and has no further comments.
c	Decommissioning
	The Applicant agrees with the notes provided and has no further comments.
d	Vessel noise
	The Applicant agrees with the notes provided and has no further comments.
e	Vessel Interactions
	The Applicant agrees with the notes provided and has no further comments.
f	Indirect effects through effects on prey species, including habitat loss
	The Applicant agrees with the notes provided and has no further comments.
g	Changes to water quality
	The Applicant agrees with the notes provided and has no further comments.
? h	In-combination effects
	The Applicant agrees that the notes provided accurately reflect the positions of the Applicant and the interested parties and would like to add that, the draft Review of Consent (RoC) HRA (BEIS, 2018) has recommended a Site Integrity Plan approach.

9 Conclusion

- Based on the Information to Support HRA report (document 5.3 [APP-201]), the additional assessment of effects of habitat loss due to cable protection [REP6-019] and various additional submissions to the Examination, the Applicant maintains the position that Norfolk Boreas will have no AEoI on any sites screened into the HRA, taking into account mitigation measures which are secured through the DCO and associated certified documents.

10 References

BEIS 2018 Record of The Habitats Regulations Assessment Undertaken Under Regulation 65 of the Conservation of Habitats and Species (2017), and Regulation 33 of The Conservation of Offshore Marine Habitats and Species Regulations (2017). Review of Consented Offshore Wind Farms in the Southern North Sea Harbour Porpoise SCI (now SAC).

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JNCC and Natural England (2013) Special Area of Conservation (SAC): Haisborough, Hammond and Winterton candidate Special Area of Conservation, Formal advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended), and Regulation 18 of The Offshore Marine Conservation Regulations (Natural Habitats, &c.) Regulations 2007 (as amended), Version 6.0, March 2013

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<http://www.marlin.ac.uk/habitats/detail/377>

Appendix 1 Updated Broadland SPA and Ramsar Screening Matrix (updates from the version submitted at Deadline 1 [REP1-013] highlighted in blue text)

Site Features/ Criterion	Likely effect(s) of Norfolk Boreas offshore project area											
	Collision mortality			Displacement/Disturbance			Barrier Effect			Cumulative/In-combination		
	C	O	D	C	O	D	C	O	D	C	O	D
SPA features												
Bittern <i>Botaurus stellaris</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Marsh harrier <i>Circus aeruginosus</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Hen Harrier <i>Circus cyaneus</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Bewick's swan <i>Cygnus columbianus bewickii</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Whooper swan <i>Cygnus cygnus</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Ruff <i>Philomachus pugnax</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Gadwall <i>Anas strepera</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Shoveler <i>Anas clypeata</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Wigeon <i>Anas penelope</i>		Y (a)		N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	N (b)	Y (a)	N (b)
Ramsar features												
Bewick's swan <i>Cygnus columbianus bewickii</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Gadwall <i>Anas strepera</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Pink-footed goose <i>Anser brachyrhynchus</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Shoveler <i>Anas clypeata</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)

Wigeon <i>Anas penelope</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Marsh harrier <i>Circus aeruginosus</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Savi's warblers <i>Locustella luscinioides</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Cetti's warbler <i>Cetti cetti</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Bearded tit <i>Panurus biarmicus</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Garganey <i>Anas querquedula</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Pochard <i>Aythya ferina</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)
Bittern <i>Botaurus stellaris</i>		Y (a)		N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	N (c)	Y (a)	N (c)

(a) Natural England considers that there is potential for connectivity during migration and therefore LSE cannot be screened out.

(b) Survey data show no evidence of Broadland SPA features occurring in the proposed Norfolk Boreas site, and migrations of birds from this SPA are likely to result in negligible numbers passing through the Norfolk Boreas site during migration (see Table 6.1 of offshore screening, document reference 5.3.5.1).

(c) Ramsar criterion: the predicted effect attributable to the proposed Norfolk Boreas project is so small that it would not significantly contribute to or alter the overall in-combination assessment for these features at Broadland SPA and Ramsar (see Table 6.1 of offshore screening, document reference 5.3.5.1).