THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010

HORNSEA PROJECT THREE OFFSHORE WIND FARM

Planning Inspectorate Reference: EN010080

NATURAL ENGLAND

Written Submission for Deadline 7

Natural England's comments on the Report on the Implications for European Sites (RIES)

Dated 14th March 2019

1. Documents used to inform the RIES – Applicant's position

1.1. Natural England notes that the RIES is based on the conclusions presented in the Applicant's RIAA (Report to Inform an Appropriate Assessment), which was submitted with their application [APP-051] and the accompanying annexes. However, we note that the Applicant has made a number of subsequent submissions throughout the examination, some of which indicate a change in their position.

1.2. This is particularly the case for their assessment of ornithological impacts, where (for example) they have made multiple submissions based on revised parameters of their collision risk modelling (and in some cases there are revisions to revisions).

1.3. Natural England notes that in some cases, updated versions of assessments are referred to in the supporting notes, but not always. Consequently it is not always clear if the planning inspectorate are considering the applicant's position in the RIAA, or a subsequent position in their analysis.

1.4. In previous submissions, Natural England has highlighted that it is no longer clear what the applicant's current position is, and how far this departs from their original ES and RIAA.

1.5. It is important to note that clarity on this point is not only important for this examination, but will also be important for current and future applications which need to take account of this one in their cumulative and in-combination assessments.

2. Likely Significant Effects – Screening

2.1. As highlighted in our Written Representation [REP1-213] para 5.1.1, Natural England does not consider the Applicant's approach to identifying LSE is robust and may have/has led to sites and their features not being considered fully.

2.2. The 'significance test' is a coarse filter intended to identify which proposed plans and projects require further assessment. It is the first stage of the process, and is distinct from the appropriate assessment of 'adverse effect on integrity' that follows. Unless the impact can be considered to be trivial or inconsequential, it should be screened in to the appropriate assessment.

2.3. Consequently, Natural England has advised that where there is an impact pathway between a designated site feature and the proposed activity/activities, the feature should be screened in to the appropriate assessment.

2.4. In a number of cases throughout their screening, the applicant has screened out feature on basis that they consider the level of impact to be of minor or/low significance alone. These terms are more applicable to an EIA assessment and do not always translate to a conclusion of no Likely Significant Effect.

2.5. Although these potential impacts may be considered to be of minor or low impact to the designated site alone, the potential significance of their impact in combination has not been considered.

2.6. Natural England has provided detailed comments in the tables below to indicate where we consider that additional features of the identified sites should be carried through to the appropriate assessment.

2.7. However, we also consider that there may be additional Special Protection Areas with features that have connectivity to the development Zone that have not been captured. We note that the applicant has focussed their considerations on connectivity in the breeding season. However, there may be an impact pathway for a number of species in the non-breeding season. To establish this, an assessment should be conducted using the Biologically Defined Minimum Population Scales BDMPS [a copy of this submitted at Deadline 7] of the species present at the project site in the season under-consideration.

3. Detailed comments

	Section	Comment
3.1	3.0.9	Natural England reiterates our concerns that LSE was ruled out on the basis of less than 1% baseline mortality alone. Firstly, reaching this conclusion requires a level of analysis and is therefore better captured within an appropriate assessment. Secondly, the impacts on these features have not been considered in-combination. [N.B. Natural England advise that features are screened in to the Appropriate Assessment where there is an impact pathway, but the level of assessment undertaken at that stage should be proportionate. For example, where it is concluded that the impact is less than 1% of baseline mortality, it may not be necessary to undertake a Population Viability Analysis, but the totals should be included in the in combination assessment.
3.2	3.1.1	Natural England's concerns in relation to the Applicant's approach to LSE are three-fold: • Firstly, we have concerns that the applicants approach to LSE screening has resulted in features being screened out on the basis of low level of impact 'alone', without consideration of that impact in-combination. • Secondly, with respect to Marine SPAs, we do not consider that that the impact pathways within the non-breeding season have been adequately assessed. • Thirdly, where baseline data is incomplete, a more precautionary approach should be taken to LSE screening. (i.e. numbers of birds present in the array area in the winter period, features present along the cable route in W&NNC SPA etc.).

	Section	Comment
		Natural England highlights that alongside the conclusions disputed on 6 sites, there are also likely to be addition sites/features that have not been included on this list.
3.3	4.1.1	As highlighted, Natural England does not consider that the Applicant has undertaken a comprehensive screening exercise. Therefore the conservation advice provided in REP1-213 does not cover all sites for which we may have concerns. (In section 5.1.1 of REP1 -213 it is made clear that the information provided should not be considered 'complete' due to our concerns regarding the screening).
3.4	4.2	It should also be noted that Adverse Effect on Site integrity cannot be ruled out for harbour porpoise in the Southern North Sea SCI/SAC in combination. We are able to conclude in this instance that there are mitigation/avoidance measures available that are capable of mitigating these impacts, but as the exact timing and scale of construction is not known it is not possible to establish a mitigation plan at this stage. This will be achieved prior to construction through the production of a Site Integrity Plan (SIP) which will require sign off prior to construction. In order for the SIP to be signed off, it must be demonstrated that there will be no Adverse Effect on Site Integrity from the project alone and in-combination.
3.5	4.5.2	Natural England would highlight that there has not yet been a discussion regarding alternatives.

4. Comments on Table 3.1: Sites/features for which the Applicant has identified likely significant effects

	Comment:
4.1	Overarching comment : As highlighted in our Written Representation [REP1-213] para 5.1.1, Natural England does not consider the Applicant's approach to identifying LSE is robust and may have led to sites and their features not being considered fully.
4.2	Coquet Island SPA: Natural England expected that consideration would be given to the potential impact pathway for other features of the SPA (including the assemblage).
4.3	Farne Islands SPA :

	Comment:
	Natural England expected that consideration would be given to the potential impact pathway for other features of the SPA (including the assemblage).
4.4	Fourth Islands SPA: Natural England expected that consideration would be given to the potential impact pathway for other features of the SPA (including the assemblage).
4.5	Flamborough and Filey Coast SPA : Fulmar are part of the assemblage feature, but are missing from this table. Natural England queries why this is the case when fulmar have been considered in the context of other sites (Coquet, Farnes, Fourth). Natural England note that fulmar at Flamborough have been considered in Annex 1.
4.6	Greater Wash SPA: Little tern and little gull should also be screened in. Potential impact pathways on these SPA features include displacement and disturbance impacts, as well as indirect effects on prey availability associated with construction/laying of the cable.
4.7	The Wash and North Norfolk Coast SAC: Large Shallow Inlet and Bays should also be considered.

5. Comments on Table 4.1: The Applicant's shadow appropriate assessment and degree of agreement with Interested Parties

	Comment:
5.1	Natural England would consider that there may be other sites that should be under consideration (see comments above). The comments provided on this table are in relation to the **sites** listed.
5.2	Natural England notes that the conclusions on AEoI are based on the Applicant's ES, and the level of agreement has been established based on Reponses from IPs at RR and Deadline 1&2. In a number of cases the applicant has presented additional versions of their assessments at different deadlines, which alter their assessments (if not their conclusions)
5.3	Natural England would consider that the areas of disagreement have been captured for the features/sites listed in the table. (Please see comments on table 3.1 and on the annexes for more information in relation to missing sites and features).
5.4	Southern North Sea SCI: There is no reference to a stage 2 matrix in the table, but note

	that one is presented in the Annex. (Stage 2 Matrix 2)

6. Comments on Annex 3: Stage 1 Matrices: Screening for Likely Significant Effect

	Section	Comment
	General	
6.1	"Assemblage during the breeding season"	It is unclear why this terminology is used throughout. Consideration of impacts on a breeding seabird assemblage may also include impacts outside of the breeding season.
6.2	Disturbance/Displacement of SPA features	It is unclear how disturbance and displacement have been defined within these tables, and we question why disturbance only seems to be a consideration at construction and decommissioning and displacement is only a consideration during the operational phase. Displacement of birds from an area could start to arise in the construction phase and feasibly persist until operation. Likewise disturbance from e.g. vessel movements could occur throughout the operational phase as well as at construction and decommissioning
	Stage 1 Matrix 1: Coquet Island SPA	
6.3	Table: Effects on integrity	There should be consideration of the impact on prey availability
6.4	Table: Collision and Assemblage Supporting note c	We are unclear about the commentary in supporting note c. Generally, Natural England considers that there would be no collision risk for Auk species and fulmar, but there may be a pathway for other assemblage species such as kittiwake and herring gull and lesser black backed gull. These species should be considered in the appropriate assessment.
6.5	Barrier effects	Reiterating Natural England's advice in relation to the test of Likely Significant Effect being a coarse filter (see section 2 above), Natural England would recommend that barrier effects were carried through to appropriate assessment
6.6	Displacement	Natural England agrees with the conclusion that there is LSE in relation to the Assemblage feature, but would suggest that this is not limited to Fulmar and would also include Auk species, particularly in the non-breeding season. Therefore we would like note B updating to reflect our concerns in relation to Auks.
6.7	In combination	Natural England agrees with the conclusion that there is LSE in relation to the Assemblage feature, but would suggest that this is not limited to Fulmar and would also include Auk species, particularly in the non-breeding season

	Section	Comment
		(displacement) as well as kittiwake and herring gull (collision risk). Therefore we would like note B updating to reflect NE's concerns in relation to Auks and displacement, as well as kittiwakes and herring gull and collision risk.
	Stage 1 Matrix 2: Farnes Island SPA	
6.8	Table: Effects on integrity	There should be consideration of the impact on prey availability
6.9	Table: Collision and Assemblage Supporting note B	Generally, Natural England considers that there would be no collision risk for Auk species and fulmar, but there may be a pathway for other assemblage species such as kittiwake. These species should be considered in the appropriate assessment.
6.10	Barrier effects	Reiterating Natural England's advice in relation to the test of Likely Significant Effect being a coarse filter (see section 2), Natural England would recommend that barrier effects were carried through to appropriate assessment
6.11	Displacement	Natural England agrees with the conclusion that there is LSE in relation to the Assemblage feature, but would suggest that this is not limited to Fulmar and would also include Auk species, particularly in the non-breeding season. Therefore we would like note B updating to reflect NE's concerns in relation to Auks.
6.12	In combination	Natural England agrees with the conclusion that there is LSE in relation to the Assemblage feature, but would suggest that this is not limited to Fulmar and would also include Auk species, particularly in the non-breeding season (displacement) as well as kittiwake and (collision risk). Therefore we would like note B updating to reflect NE's concerns in relation to Auks and displacement, as well as kittiwake collision risk.
	Stage 1 Matrix 3: Flamborough and Filey Coast SPA	
6.13	Disturbance	It is not clear what aspects of disturbance have been considered here, and why there has been no consideration of impacts such as increased lighting, during the operational phase. It should be noted that in relation to supporting note b 'low sensitivity' is not the same as 'not sensitive'. This would indicate that the impact should be further explored within an appropriate assessment.
6.14	Collision Risk: Kittiwake (& In Combination)	It should also be noted that based on the in-combination totals for plans and projects that already have consent, we are unable to rule out an Adverse Effect on Integrity of Kittiwake at Flamborough and Filey Coast SPA. Therefore any contribution from this project would effectively constitute an Adverse effect.

	Section	Comment
		Ref. to table 5.1 in APP-052 showing limited connectivity – Connectivity of FFC SPA Kittiwake and the development zone has been established
6.15	Collision Risk: Herring Gull (& In combination)	Natural England maintains that consideration must be given to the impact on site features in the non-breeding season, as well as in the breeding season.
6.16	Barrier effects	Reiterating Natural England's advice in relation to the test of Likely Significant Effect being a coarse filter (see para XX), Natural England would recommend that barrier effects were carried through to appropriate assessment and that supporting note i is more appropriate at that stage.
6.17	In combination	Natural England dispute the conclusion of '× Likely significant effect can be excluded' for all species.
	Stage 1 Matrix 4: Greater Wash SPA	
6.18	Common, Sandwich and little tern	Natural England would consider that there is an impact pathway for each of these species regarding prey availability, disturbance and displacement and consequently in- combination impacts. Therefore we agree that all three species should be considered within the appropriate assessment.
6.19	Little gull	"NE has also raised concerns about the appropriateness of the population size used in the migratory seabird assessment for little gull [**REP1-211**]. The Applicant has provided an additional screening document at deadline 4 in response to these concerns [**REP4-081**]." The applicant has clearly identified an impact pathway to undertake this analysis. Natural England therefore considers that little gull should be screened in to the AA.
	Stage 1 Matrix 7: Wash and North Norfolk Coast SAC	
6.20	Large Shallow Inlet and Bays	As captured in the table, Natural England would consider there to be an impact pathway for LSIB and that this should be considered further in the appropriate assessment. In relation to supporting note f, it was not agreed that there was no impact pathway for Large Shallow Inlets and Bays within the expert working groups.
6.21	Supporting note e	This supporting note is a little difficult to follow and it is not clear if this relates to The Wash and North Norfolk Coast SAC given it refers to a minimal overlap with the array.

7. Comments on Annex 4: Stage 2 Matrices: Adverse Effect On Integrity

	Section	Comment
	Stage 2 Matrix 1: North Norfolk Sandbanks and Saturn Reef SAC	
7.1	Table: Changes to water quality (incl. Supporting note i)	It seems from the supporting note that only accidental pollution has been considered as part of the assessment of potential changes to water quality. Natural England would highlight that there may be other potential impacts on water quality as a result of the activities proposed within the site such as increased levels of suspended sediment which should be considered within this assessment for completeness.
7.2	Table: Changes to physical processes (incl. Supporting note j)	There may be localised changes to physical process at the point of construction (i.e. removal of sandwaves/sandbanks) which should also be considered, as well as the potential for changes as a result of construction and operation to persist at and beyond decommissioning. For example, refer to comments on supporting note **a** (sandwave levelling – which may have implications at the time of construction) and **b** (the implications of rock protection which could result in a persistent impact on physical processes beyond the operational phase).
7.3	Supporting note **a**	Cable burial Sandwave clearance works have only been proposed and carried out relatively recently and as such there is currently no evidence on how well this technique works, whether cables remain buried thus avoiding the need for additional cable protection, and very limited evidence on how quickly dredged areas recover. Projects should fully assess the impacts of any likely sandwave clearance **at the time of application** and not at post-consent stage. Full consideration needs to be given to the volumes to be dredged, orientation of dredge to the sandbank, areas for disposal of dredged material and impacts on the benthos and sediment transport. Until further evidence is available on its efficacy as a technique and the timescales for recovery, there remains significant

	Section	Comment
		uncertainties in relation to the impacts of sandwave clearance on the interest features of Marine Protected Areas Impact of Sandwave Clearance in NNS SR SAC Sandwave levelling/sandwave clearance within NNS SR SAC, would involve the removal/levelling of part of an SAC feature. Natural England accept that the evidence provided by the applicant shows that the feature ***could*** recover. However, this is not the same as having evidence to demonstrate that it ***will*** recover. The Race Bank Study referred to here, only demonstrates that areas that have been subject to sandwave clearance had begun to show signs of recovery. Furthermore, it is not clear how applicable the Race Bank example may be to significantly greater Hornsea Project Three proposals and the recoverability of larger, deeper sandbank features found further offshore, such as the North Norfolk Sandbanks. In addition, as the applicant highlights, the potential for the recovery of the feature is likely to be aided by retaining the dredged sediment within the sandbank system 'where possible'. Whilst conclusions around the significance of the impact appear to be predicated on this being a possibility, the potential disposal locations are not discussed. It is therefore not possible to be certain that the sediment will be retained. (Additionally, without further information on the location of the potential disposal sites it is not possible to understand the potential impacts of disposal on site features). As highlighted above, there is limited evidence to demonstrate the efficacy sandwave clearance in terms of avoiding the need for cable protection. The addition of cable protection into the site would constitute a loss or change to the feature (depending on the feature impacted), and as there is limited evidence that cable protection can be successfully decommissioned without removing part of the feature, this impact on the site is considered to be persistent/permanent depending on feature and/or whether it is left in situ. It should be noted that the sandbank feature is currently in unfavourable condition. Therefore, the competent authority has a responsibility under the habitat's regulations to ensure that any further plans or projects will not hinder the recovery of the feature. Fundamentally, NE/JNCC's view, is that there is not yet sufficient evidence to demonstrate beyond reasonable scientific doubt that the sandbank feature within the site is

	Section	Comment
		capable of full recovery, and therefore we cannot agree with the Applicant's conclusions. To address this, NE/JNCC would advise that a level of precaution is built in to the assessment to account for these areas of uncertainty and to consider the ways in which the potential impacts may be avoided/mitigated/reduced. As with North Vanguard a Site Integrity plan (SIP) one stage up from the Cable Installation Plan that considers all impacts to the site collectively would be most appropriate
7.4	Supporting note b.	Reef is an ephemeral feature and it is widely accepted that areas identified in a pre-application survey may have changed or moved prior to construction and that equally areas previously identified as having no reef present may have been colonised. In recognition of this issue the UK SNCBs have developed and keep updated, the 'Reef Layer'. In simple terms, this dataset is based on the best available evidence of known reef locations and extent, and includes a buffer to account for the ephemerality of the feature. These buffers represent the areas that the SNCBs consider should be managed for reef, and therefore where operations which are likely to damage reef should be avoided. This method is of avoiding damage to features is widely accepted across industries (aggregates, oil and gas, cables, renewables) and underlies Defra fisheries management plans in designated sites. Please see "Marine Buffers Doc." submitted at Deadline 7. <u>Assessment of impacts to reef in NNS SR SAC</u> As the reef feature within NNS SR SAC has a restore conservation objective, plans and projects capable of impacting on the site must demonstrate that they will not further hinder the conservation objectives of that site. Natural England/JNCC would consider that the areas identified within the reef layer should be treated as reef within the appropriate assessment, in order to ensure that a worst case scenario has been considered and that appropriate measures to avoid/reduce/mitigate the impacts have been identified. <u>Micro-siting as mitigation within designated sites</u> Micro-siting to avoid areas of reef could in theory act as mitigation. However, for this to be considered as acceptable mitigation to reach a conclusion of no AEoI, there must be absolute certainty beyond reasonable scientific doubt that this could be achieved within the development area. Demonstrating that micro-siting is achievable may be relatively straight forward for the installation of one or two cables within the cable corridor, but would become

	Section	Comment
		increasingly difficult with each additional cable, bearing in mind that the applicant's maximum design scenario includes the installation of up to 6 cables with a cable corridor covering 50% of the Saturn Reef management area. It should also be considered that micro-siting to avoid one feature may have implications for another. It should also be considered that the applicant is committing to micro-siting 'where possible', which again does not give certainty. NE/JNCC accept that in this instance demonstrating the required level of certainty to rely on micro-siting as acceptable mitigation to remove impacts on reef completely is likely to be challenging given the ephemeral nature of the feature and the data limitations, and therefore we do not consider this a suitable mitigation measure to address impacts that this site. We therefore reiterate our advice regarding the use of the SNCB Reef Layer. **[N.B. It is really important to note that seeking to minimise an impact does not offer certainty that an AEOI can be ruled out.]**
7.5	Supporting note c	The applicant has not provided information on the proposed disposal location of the material that will be removed through sandwave levelling. Therefore it is not clear how a conclusion on the potential significance of this impact could be reached.
7.6	Supporting note d	See above
7.7	Supporting note f	<u>Conservation Objective</u> It should be noted that the conservation objectives for both features (sandbanks and reef) are to **recover** to favourable condition. <u>Cable protection</u> NE/JNNC advise there is currently little or no evidence to provide certainty beyond reasonable scientific doubt that cable protection can be removed without causing a further impacts on designated site features, based on the technology that is currently available. [See Annex C and D to NE's D7 Submission] It is recognised that new technologies may develop over the operational lifetime of the project and we would welcome the commitment to explore the feasibility of removal at decommissioning, but for the purposes of the HRA, the impact of the cable protection remaining in situ permanently should be assessed. Cable protection would therefore represent the permanent

	Section	Comment
		loss of reef feature in this context. <u>Cable protection requirement</u> The applicant has set out a maximum design parameter for cable protection within designated sites, which equates to cable protection across 10% of the total length of cable within the site. This is presented in the draft DCO as an overall volume of cable protection to potentially be used within the designated site. It is the applicant's intention that this total volume of cable protection will be 'available' throughout the operational lifetime of the project. The applicant is also seeking an additional 25% on top of the volume of cable protection requested for use within the site for replenishment. NE/JNCC's points are as follows: - The impacts are completely on site feature - The volume/extent of cable protection sought within the site is not an insignificant amount. - The use of cable protection would result in a permanent loss/change to the feature. - We acknowledge that based on previous cable installations (requiring c6% of their cable lengths to be protected) the Applicant has presented reasonable justification for the WCS of 10% along the **entire** export cable length requiring cable protection and this could meet EIA requirements. Given that the applicant has presented this as a conservative estimate, and based over a calculation over a much wider area, it is unclear whether this assumption is directly applicable to this site. This is important because cable protection will have a permanent impact on the site and the volume required can make a big difference in relation to the outcome of an appropriate assessment. - The 10% figure has been represented as a volume within the draft DCO, and it appears that this volume would remain the permitted volume regardless of the length of cable that is actually installed. Impacts on designated sites should always be avoided/reduced/ mitigated as far as possible. - Whilst NE/JNCC consider that the requirement for additional cable protection across the lifetime of the project should be considered within the ES, we agree with the MMOs position that the implications of the impact on designated site features over the life time of the project can't be assessed with sufficient certainty. Therefore we also agree that the volume of cable protection permitted in the DCO

	Section	Comment
		should relate only to the amount required at construction and that any additional requirement should be dealt with through a separate marine licence. Please see ANNEX C of our D7 submission for further discussion <u>Potential for reef to colonise artificial habitats.</u> NE/JNCC's current position is that reef occurring on artificial habitats would not qualify as Annex I feature. (Although we recognise this view may be subject to change in the future as more evidence becomes available). Please see ANNEX B of our D7 submission for further discussion <u>Sensitive Cable and Scour Protection</u> NE/JNCC welcome the applicant's proposal to trail the use of 'sensitive scour protection' within the designated site. However, this would still require the deposition of material from outside the site so will continue to represent permanent loss/change to the feature. It is also noted in [REP1 -216] that the size of the sensitive protection, may not be similar to the surrounding habitat as it more likely to winnow away and doesn't provide adequate protection
7.8	Supporting note k	"*NE queried whether the assessment adequately considers the combined effects of the different phases of the Proposed Development as they are not convinced that features would recover completely before the next impact occurs [RR-97, REP1-212, REP1-217, REP4-130 and REP6-055].*" This comment applies more widely than the in combination assessment. <u>In combination assessment</u> As highlighted in the comments above (in particular comments made in relation to supporting notes **a** and **b**), Natural England & JNCC do not consider that the evidence provided provides certainty that there will be no residual impacts on site features. Therefore the appropriate assessment must seek to quantify these impacts and establish if they are likely to cause an adverse effect on site integrity alone or in combination. <u>Exclusion of Reef from in combination assessment</u> Please refer to the comment on supporting note b above

	Section	Comment
		regarding the use of the SNCB Reef Layer, and the fact that this feature is currently in unfavourable condition. Please also note NE/JNCC position regarding the feasibility of micro-siting within the cable corridor as mitigation and the consideration of the colonisation of *Sabellaria spinulosa* on artificial substrates Consequently, NE/JNCC do not agree with the applicants conclusion that reef will not be affected and that any impacts that arise would be mitigated. We would therefore expect in-combination impacts to be considered for this feature.
	Stage 2 Matrix 2: Southern North Sea SCI	
7.9	Supporting note a	For clarity, Natural England considers that the soft start procedure is an appropriate form of mitigation to reduce the risk of PTS. Natural England's comments in relation to the JNCC guidance being out of date were in reference to SIP, and the fact that there are now a much wider range of mitigation options available than outlined in the JNCC guidance which should be considered/included within the outline SIP.
7.10	Supporting note b	*"NE agrees with the Applicant's position that effects from the Proposed Development alone would not lead to adverse effects on the integrity of the SCI [**RR-097** and **REP1-213**]"* N.B this is subject to the agreed mitigation being in place.
7.11	Supporting note f	Natural England has concerns that six months is not sufficient time for the SIP to be agreed and provisions to be in place if significant impacts are concluded in the in-combination assessment.
	Stage 2 Matrix 3: The Wash and North Norfolk Coast SAC	
7.12	Table: Features	Large Shallow Inlet and Bays should also be considered in the assessment.
7.13	Table: Changes to physical processes.	As highlighted in relation to NNS SR SAC above, there may be localised changes to physical process at the point of construction (i.e. removal of sandwaves/sandbanks) which should also be considered, as well as the potential for changes as a result of construction and operation to persist at and beyond decommissioning. For example, refer to comments on supporting note **a** (sandwave levelling – which may have implications at the time of construction) and **b** (the implications of rock protection which could result in a persistent impact on physical processes beyond the operational phase).

	Section	Comment
7.14	Notes:	<u>Adequacy of the baseline</u> In the Applicant's original proposals, the cable route did not cross through the W&NNC SAC. Consequently their survey campaign did not include this site and they relied on extrapolated data from outside of the site and historic data from within the site (not within the development zone) in order to characterise the cable corridor. In response to feedback, the Applicant collected drop down video footage at six locations along the cable corridor. Natural England considers that whilst this provides information on the habitats present at the survey locations, without supporting geotechnical and geophysical information, it is not possible to stablish the likely extent of features within the cable corridor. Therefore NE does not consider that the baseline has been adequately characterised at this site. <u>Feature condition</u> Please note that the following Annex I features are in unfavourable condition : sandbanks slightly covered by water all of the time, mudflats, reefs, LSIB~~s~~ Including (but not exclusively) circalittoral rock which is one of the subfeatures of reef and mixed sediment which is one of the subfeatures of sandbanks. Therefore, recovery of these features should not be hindered by the current development [Clarification: Natural England's advice is that the assessment should be made in relation to the site features against their conservation objectives.]
7.15	Supporting note a	<u>Sandwave clearance</u> As per the comments made above in relation to the evidence available to support the applicant's conclusions regarding the recoverability of areas of feature impacted by sandwave clearance, Natural England would reiterate that the evidence from the Race Bank project only demonstrates that the areas have begun to show signs of recovery and not that the area has fully recovered. It is therefore not possible to conclude with certainty beyond reasonable scientific doubt that the feature will recover. As with the assessment of NNS SR, the Applicant's assumptions in relation to the recoverability of the feature are predicated on the assumption that the dredged/cleared material will be retained within the sandbank system. As with NNS SR the potential disposal locations have not been identified within the ES. It is therefore not possible to be certain that the sediment

	Section	Comment
		will be retained. Additionally, without sufficient information to characterise the baseline of the site and further information on the location of the potential disposal sites it is not possible to understand the potential impacts of disposal on site features (NB: All of the Wash and North Norfolk Coast SAC is Annex I habitat). As highlighted above in the context of NNS SR, there is limited evidence to demonstrate the efficacy of sandwave clearance in terms of avoiding the need for cable protection. The addition of cable protection into the site would constitute a loss or change to the feature (depending on the feature impacted), and as there is limited evidence that cable protection can be successfully decommissioned without removing part of the feature, this impact on the site would be permanent.. Consequently, it is Natural England's view, is that there is not yet sufficient evidence to demonstrate beyond reasonable scientific doubt that the sandbank feature within the site is capable of full recovery, and therefore we cannot agree with the Applicant's conclusions. To address this, NE/JNCC would advise that a level of precaution is built in to the assessment to account for these areas of uncertainty and to consider the ways in which the potential impacts may be avoided/mitigated/reduced. Please see ANNEX C of our D7 response for further comments. It is likely that a site integrity plan is also required as proposed by Norfolk Vanguard for impacts to SACs <u>Cable protection</u> As highlighted in relation to NNS SR above, the Applicant's calculation of the amount of cable protection they require is based on previous cable installations (requiring c6% of their cable lengths to be protected), rather than from direct evidence from the site. As highlighted in the comments above, Natural England does not consider that there is sufficient evidence to demonstrate that cable protection can be removed at decommissioning without further impacting the features, and consequently consider the impact to be permanent. As a result the amount of cable protection placed within the designated site would have a significant bearing on the conclusions of an appropriate assessment As highlighted in the supporting notes, the experience of cable installation from other offshore windfarms within the site, has demonstrated that the ground conditions can be problematic, and that remedial works have been required. Natural England has requested a cable burial risk

	Section	Comment
		assessment (CBRA) prior to consent in order to provide sufficient certainty regarding the conclusions of the HRA. However, the information provided by the applicant has been unable to address that uncertainty. (See XXX for further comments on the PTA and cable protection)).
7.16	Supporting note b	Please also see comments in relation to Micro-siting as mitigation, the potential for *Sabellaria spinulosa* reef to colonise cable protection, and the use of 'sensitive' cable protection, which are also applicable here. Overall, Natural England consider that there is insufficient certainty that the potential impacts on the reef feature can be mitigated to support a conclusion of no Adverse Effect on Integrity beyond reasonable scientific doubt.
7.17	Supporting note c	The applicant has not provided information on the proposed disposal location of the material that will be removed through sandwave levelling. Therefore it is not clear how a conclusion on the potential significance of this impact could be reached.
7.18	Supporting note d	See above
7.19	Supporting note f	The comments made in relation to supporting note f would appear to be equally applicable to reef. <u>Conclusion in relation to 10% cable protection</u> The applicant's clarification note [**REP1-138**] provided a rationale for their calculation, but this did not allay Natural England's concerns in relation to the assessment of impacts on designated features. As highlighted in relation to supporting note a, the Applicant's assessment of their cable protection requirement has not been based on site level considerations. As cable protection represents a permanent impact on the designated site, it is important that its use is minimised. <u>Potential for reef to colonise artificial habitats.</u> NE/JNCC's current position is that reef occurring on artificial habitats would not qualify as Annex I feature. (Although we recognise this view may be subject to change in the future as more becomes available). <u>Sensitive Cable and Scour Protection</u> NE/JNCC welcome the applicant's proposal to trail the use of 'sensitive scour protection' within the designated site. However, this would still require the deposition of material from outside the site so will continue to represent

	Section	Comment
		permanent loss/change to the feature. It is also noted in [REP1 -216] that the size of the sensitive protection, may not be similar to the surrounding habitat as it more likely to winnow away and doesn't provide adequate protection
	Stage 2 Matrix 4: Coquet Island SPA	
7.20	Table: Features	See comments on Stage 1 Matrix 1. Natural England is unclear why only fulmar have been included in the assessment when a number of the assemblage species are likely to have connectivity with the development zone. We would therefore consider this table to be incomplete.
7.21	Table: Disturbance/Displacement	Please note Natural England's overarching comment regarding consideration of disturbance and displacement activities across all stages of the project.
7.22	Table: Barrier Effects	Natural England considers that barrier effects should be considered at the Appropriate Assessment phase .
	Stage 2 Matrix 5: Farne Islands SPA	
7.23	Table: Features	See comments on Stage 1 Matrix 2. Natural England is unclear why only fulmar have been included in the assessment when a number of the assemblage species are likely to have connectivity with the development zone. We would therefore consider this table to be incomplete
7.24	Table: Disturbance/Displacement	Please note Natural England's overarching comment regarding consideration of disturbance and displacement activities across all stages of the project.
7.25	Table: Barrier Effects	Natural England considers that barrier effects should be considered at the Appropriate Assessment phase .
	Stage 2 Matrix 6: Flamborough and Filey Coast SPA	
7.26	Kittiwake In combination impacts	It is Natural England's position that and Adverse Effect on Integrity on Kittiwake at Flamborough and Filey Coast SPA cannot be ruled out based on the in-combination totals of consented plans and projects. Consequently, any additional impact on this feature would be considered to constitute an Adverse Effect on Site Integrity in combination.
7.27	Notes:	For clarity, Natural England's concerns in relation to the baseline data ***are*** applicable to all of the features of the SPA. The implication of this is that there would not be certainty beyond reasonable scientific doubt to support the

	Section	Comment
		applicant's conclusions. "*The Applicant has maintained its position on the basis that the Proposed Development is located 150 km from the SPA and that extending the breeding season to cover the period advised by NE and the RSPB could lead to inclusion of immature/non-breeding birds that are not associated with the SPA breeding colonies."* Natural England has explained that the converse of this is that excluding these months will substantially under-estimate the impacts apportioned to the colony. <u>Applicant's 'Preferred Approach'</u> The applicant has revised a number of their assessments (some more than once) since their original application. It is unclear to Natural England what the status of these revised/preferred approaches are and whether they are considered to supersede the information set out in the ES and RIAA. For example: REP4-049 presents an "alternative approach" to the ES, but it is not clear whether the Applicant is saying that this should supersede the approach set out in their ES/RIAA. Natural England advice on the alternative approaches is often different to our advice on the ES, so this lack clarity of makes it particularly difficult for to provide comments on this REIS. For example, the flight speeds that the applicant has used within their original ES accord with the SNCBs advice [APP-051], but the applicant has subsequently changed their flight speeds and introduced new avoidance rates at deadline 1 [REP1-188]. *"At deadline 6, in response to a request from the ExA, the Applicant provided a summary of CRM based on its preferred parameters [**REP6-042**] and inputs and one based on those advised by NE [**REP6-043**]."* The parameters in REP6-043 are not the parameters that the Applicant has used in their ES and RIAA. Does this mean that the ES and RIAA are now inaccurate and should be ignored? To clarify, REP6-043 is the applicant's document and not a Natural England document. It presents CRM figures using parameters that we have advised the Applicant to use except crucially we advised that the Applicant should use densities estimated from 2 years of baseline survey data.REP6-043 does not include CRM outputs that are based on 2 years of survey data.

	Section	Comment
7.28	Supporting note a	*"It should also be noted that the predicted collision rates are considered precautionary due to the likely presence of a significant number of non-breeding adult birds in the observed population in the array area "* Non-breeding adult birds can still be part of the SPA feature. This is only one aspect of the uncertainty and variability in predictions of collision mortality of FFC SPA birds. Uncertainty can operate in both directions. It is not representative of the full range of uncertainty in the estimates to just mention one factor here. Natural England and RSPB disagree with the values of Nocturnal Activity Factors (NAF) used, rather than the use of NAF. It is not clear if Natural England and the applicant are in agreement on flight speeds. Natural England agrees with the flight speeds used in the ES, but does not accept the Applicant's alternative approach presented at a subsequent deadline [REP1-188] which has been used in all of their subsequent revisions of their CRM. *"see [**REP1-211**], [**REP1-212**], [**REP3075**], [**REP4-130**] and [**REP6-055**]"* Some of these references refer to subsequent iterations of the Applicant's assessment and not necessarily relevant to APP-051 – this is confusing. *"The Applicant has maintained its position regarding the parameters and choice of Band model"* This statement is not correct as for example the Applicant has introduced different NAFS (REP1-188), different ARs (twice) (REP1-188 and REP6-042) and different flight speed (REP1-188) parameters during the Examination – these are not the same as those in the Applicant's ES and RIAA or in the PEiR docs. *"The Applicant has maintained the position that its analysis does take account of the degree of uncertainty associated with the modelling outputs [**REP1-122**, **REP3-004** and **REP5-008**]."* As the applicant has revised their analysis/aspects of their analysis multiple times through the examination, it would be helpful to understand which particular analysis is being referred to here.

	Section	Comment
7.29	Supporting note b	It is unclear if the view present at the start of this note is that of the Applicant or the Planning Inspectorate. The Applicant revised their PVA figures at REP4-092. Based on Natural England's assessment of these, we do not agree with the statement that " levels of in combination mortality predicted in Table 7.39 of [**APP-051**] would not be sufficient for the population to decline below the SPA citation numbers for this species". Natural England would reiterate that and Adverse Effect on Integrity on Kittiwake at Flamborough and Filey Coast SPA cannot be ruled out based on the in-combination totals of consented plans and projects. It is also unclear which citation levels are being referred to and it should also be noted that the Conservation Objectives for kittiwake at FFC SPA remains to restore to the original citation population figure for Flamborough Head and Bempton Cliffs SPA. The PVA modelling within APP-051 does include some adjustment for "as built scenarios". It also includes NAF, but these are not figures that Natural England is in agreement with for Hornsea 3. "The Applicant submitted a revised PVA at deadline 1 [**REP1-135**] but this did not allay ours concerns [**REP3-075**]" The revised PVA [REP1-135] did not address Natural England's Advice. Natural England remain concerned that there is potential for AEoI. It should also be noted that the Applicant has submitted an updated version of their PVA [REP4-092]. <u>The Applicant's Revised In combination Assessment</u> As an increasing number of projects are consented, the risk of in combination/cumulative impacts reaching significant levels has increased. (As highlighted above, Adverse Effect on Integrity on Kittiwake at Flamborough and Filey Coast SPA cannot be ruled out based on the in-combination totals of consented plans and projects, so projects that contribute to this total would be considered to be contributing AEoI irrespective of the scale.) Most offshore windfarms are consented using a Rochdale Envelope Approach, and the assessments of impact are based on their maximum design scenario, to represent a worst case scenario in terms of impact. It is therefore

	Section	Comment
		possible that the "as built" impacts will be different to those assessed. The Applicant has presented an in combination assessment which revises the figures presented by other projects to reduce them to what they consider to be a more realistic reflection of the "As built scenario". Natural England has provided more detailed comment on the Applicants approach at deadline 6 [REP6-053]. However in the context of the HRA, Natural England would make the following overarching points: - **The principle of revising the figures from other projects:** Within this assessment represents a set of assumptions from the applicant in relation what they consider to be a **most likely scenario** within the Maximum Design Parameters. Whilst we acknowledge that these assumptions are informed by their expertise of the industry, Natural England's view is that unless these parameters are legally secure (i.e. the MMO/Marine Scotland Licensing) can confirm/give certainty the project **would not be able to** build out to their Maximum), then the figures from their original assessment should be used. - **The Applicant's approach to revising the figures of other projects:** Natural England made detailed comments on the applicant's approach to revising the collision and displacement figures of consented plans and projects in our deadline 6 response [REP6-053]. Consequently Natural England does not consider that the Applicant's in-combination assessment is valid, and consider that it has the potential to significantly under-estimate the in-combination impact. …."and also applies a NAF (Table 7.35, [**APP-051**]" It's unclear what this relates to as CRM always apply a NAF. Natural England did not agree with the NAF presented in the ES. The applicant has since presented figures using alternative NAF, but these do not accord with Natural England's advice.
7.30	Supporting note c	**Razorbill:** This is based on the figures provided in the application. Natural England has provided considerable comment on the applicants approach to displacement (as summarised in o below) – the applicant has presented an approach that is more aligned with NE advice in Appendix 28 Annex C at deadline 4. Please refer to table 1.17 p28

	Section	Comment
		Mortality impacts ranges from 0 – 63 for razorbill at FFC SPA (including immatures in the breeding season) (19 being adults in the non-breeding season)
7.31	Supporting note d	NE do not agree that the predicted impact is 'negligible'.
7.32	Supporting note e	**Guillemot:** As above please refer to table 1.13 Appendix 28 Annex C at deadline 4 range is 3 – 995. 3-59 adults in the non-breeding season.
7.33	Supporting note f	Natural England do not agree that the predicted impact is 'negligible'. "*No indication that, at the level of mortality predicted to arise from the Proposed Development in combination with other projects, the population is likely to decline over a period of 35 years such that the feature would no longer be considered in favourable condition (paragraphs 7.7.2.41 – 58, [**APP-051**])"* This refers to a PVA analysis that has subsequently been updated by the applicant.
7.34	Supporting note g	*"Due to the low percentage of the SPA population affected by collision and the small increase in background mortality it is assessed that there is no adverse effect on integrity of the feature population of the SPA (paragraphs 7.5.2.32 - 35, [**APP051**])."* It should be made clear that this is 'in the applicant's view'.
7.35	Supporting note h	**Gannet:** As above Table 1.9 (Appendix 28, annex c, deadline 4) – displacement figures = 0-76 adults at FFC SPA (including 8 in the non-breeding seasons)
7.36	Supporting note i	"*The Proposed Development contributes to less than 3% of the in combination collision risk total for gannet at the SPA (section 7.7, [APP-051]).*" - It should be made clear that this is the Applicant's view Based on NE's assessment of the Applicant's figures would indicated that the contribution of HOW3 is considerably higher than 3%. "PVA modelling indicates that the resulting levels of in combination mortality predicted in Table 7.36 of APP-051 would be insufficient for the population to decline below the SPA citation numbers for this species."

	Section	Comment
		Again, this is the Applicant's view- NE do not agree. It is unclear which citation numbers are being referred to. The conservation objective for FFC SPA is to recover the Kittiwake population to the citation numbers for Flamborough head and Bempton Cliffs SPA. Please also see NE's comments on NAF and 'as built scenarios' under supporting note b above.
7.37	Supporting note j	*"An in combination displacement impact of 14 birds for gannet would not adversely affect the integrity of the SPA."* NE don't agree with this figure and as stated previously, this is based on a PVA modelling that has since been superseded by revisions submitted by the applicant.
7.38	Supporting note o	This paragraph is a little unclear and would benefit from re working. NE is unsure what is meant by "*particularly the monthly estimates of abundance" and "the inclusion of immature individuals.* Natural England would also highlight that our key concern is in relation to the months of missing data.
	Stage 2 Matrix 7: Greater Wash SPA	
7.39	Table: Features	As highlighted in stage 1 comments – NE is of the view that all tern species and little gull should have been considered within the appropriate assessment
7.40	Table: Disturbance/Displacement	Please note NE's overarching comment regarding consideration of disturbance and displacement activities across all stages of the project.
7.41	Table: Barrier Effects	NE consider that barrier effects should be considered at the Appropriate Assessment phase.
	Stage 2 Matrix 8: North Norfolk Coast SPA	
7.42	Marsh Harrier	Natural England agree with the applicant's conclusions in relation to marsh harrier. However, we would highlight that should nesting sites be discovered during pre-construction surveys, or prior to construction, further assessment would

	Section	Comment
		be needed and appropriate mitigation agreed.
7.43	Pink Footed Geese	Pink footed geese are NE's only outstanding concern in relation to this site. It is likely that the potential impacts can be mitigated, but discussions with the Applicant on the mitigation plan are ongoing.
7.44	Supporting note c.	*"NE agree that 12 months is acceptable but wishes to be consulted 12 months prior to construction commencing to ensure that mitigation is sufficient and can be implemented effectively [**REP1-207** and **REP1213**]. It is within their remit to sign off such mitigation plans relating to SPA features before mitigation can be implemented [**REP3-074**]."* As clarified in our deadline 6 response, the LPA would be responsible for the sign off of the mitigation plan in consultation with Natural England.