



Norfolk Vanguard Offshore Wind Farm The Applicant's Response to the Requests for Additional Information

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Glossary of Acronyms

AEol	Adverse Effect on Integrity
AOE	Alde-Ore Estuary
BEIS	Department for Business, Energy & Industrial Strategy
CfD	Contracts for Difference
CSIMP	Cable Specification, Installation and Monitoring Plan
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
ExA	Examining Authority
HHW	Haisborough, Hammond and Winterton
FFC	Flamborough and Filey Coast
GW	Gigawatts
MMO	Marine Management Organisation
NE	Natural England
NSAG	Necton Substation Action Group
OCocP	Outline Code of Construction Practice
OLEMS	Outline Landscape and Ecological Management Strategy
OTMP	Outline Traffic Management Plan
PVA	Population Viability Analysis
RAG	Red, Amber, Green
RSPB	Royal Society for the Protection of Birds
RUK	Renewables UK
SAC	Special Area of Conservation
SIP	Site Integrity Plan
SoS	Secretary of State
SPA	Special Protection Area
TWh	Terawatt-hours
TWT	The Wildlife Trusts

1 The Applicant's Response to the Requests for Additional Information in regard to the Norfolk Vanguard Application.

1. On 5 July 2021, the Secretary of State confirmed the approach that would be taken to the redetermination of the application for development consent for the Norfolk Vanguard project. Whilst the focus of re-determination originally related to consideration of onshore cumulative effects near Necton, particularly in relation to landscape and visual impact arising cumulatively as a result of the proposed onshore project substations for both the Norfolk Vanguard and Norfolk Boreas projects, paragraph 5 of the Secretary of State's letter states:

"In addition, the Secretary of State notes that a number of consultation responses expressed the need to consider impacts beyond the cumulative landscape and visual impacts of the onshore substation infrastructure at Necton. Having considered these responses, the Secretary of State has decided to revisit the conclusions of the Habitats Regulations Assessment in relation to certain protected sites (see further paragraphs 17 to 22 below)."

2. At paragraphs 17 to 22, the Secretary of State then requests additional information in relation to the Alde-Ore Estuary Special Protection Area (AOE SPA) (paragraph 17), the Flamborough and Filey Coast Special Protection Area (FFC SPA) (paragraphs 18 to 20 inclusive), and the Haisborough, Hammond and Winterton Special Area of Conservation (HHW SAC) (paragraphs 21 and 22).
3. During the Norfolk Vanguard examination, the Applicant made a number of submissions to evidence the Applicant's position that the project does not give rise to an AEoI in respect of any European site. Notwithstanding the highly precautionary approach taken by Natural England, the Applicant has designed and further refined the Project to commit to significant levels of mitigation in order to avoid AEoI. For all three designated sites referred to in the Secretary of State's letter, the Applicant is of the firm position that it has mitigated all possible effects and therefore AEoI can be ruled out.
4. With respect to the HHW SAC the Applicant has committed to an extensive suite of additional mitigation measures (see the HHW SAC control documents 8.20 for detail) to reduce effects from "permanent" to "long term temporary" and result in a reduction of scale from 0.052km² to a worst case maximum area of impact of 0.02km² which equates to 0.0014% of the HHW SAC.
5. With respect to ornithological mitigation, the design revisions have resulted in considerable reductions in the predicted ornithological impacts of the Project. The wind farm design submitted in the original application comprised 200, 9MW turbines with a draught height (gap from the sea surface to the lower rotor tip) of 22m.

During the Examination the Applicant removed the 9MW turbine from the design envelope, moving to a design for 180, 10MW turbines and a minimum draft height of 27m.

6. In response to a request from the Secretary of State, the Applicant undertook a detailed review of the turbine and construction vessel market to explore realistic options for reducing the Project's impact footprint. This resulted in a commitment to reduce the number of turbines to a maximum of 158 (for an 11.55MW model) or 124 (for a 14.7MW model) and increases in draught height to 30m for turbines of 14.7MW (or higher capacity) and 35m for turbines with generating capacities below 14.7MW. These variable limits reflected the availability of construction vessels capable of installing turbines of this size. The consequent reduction in worst case collision risks obtained with these changes was 82% for kittiwake (with similar reductions for other species [ExA; Mit; 11.D10.2]). The number of kittiwake collisions apportioned to the Flamborough and Filey Coast SPA, derived using Natural England's preferred methods, was thereby reduced from 121 to 21, which is less than 6% of the total predicted mortality of birds from the SPA, and 1/3rd the equivalent mortality predicted for the Hornsea Project Three wind farm (the only project for which kittiwake compensation has been required).
7. A very similar collision reduction was obtained for lesser black-backed gulls from the Alde-Ore Estuary SPA, with the collision prediction (using Natural England's preferred methods) reducing from 8 to 2.6.
8. While these turbine design changes have reduced collision risks, the way displacement is assessed (based on the lease area footprint) means there have not been any equivalent updates to the assessed displacement impacts. However, rather than this meaning that these impacts would be unaffected by the design changes, this is considered to be a limitation of the methods used which do not incorporate changes such as turbine spacing (which increases with larger turbines in order to accommodate extended wake effects). This aspect notwithstanding, the predicted displacement impact of the Project on the guillemot and razorbill features of the Flamborough and Filey Coast SPA are very small. Even when the most precautionary combinations of parameters are used (70% displacement and 10% mortality, which Natural England has indicated they do not consider are likely to apply to the Project) the guillemot mortality from the SPA was only 15 individuals and for razorbill was only 6 individuals. Indeed, when evidence about realistic displacement mortality rates for these species is considered, the 10% mortality value reduces to no more than 2-3% (note that while Natural England's assessment in [REP9-057] equates to this, Natural England has stressed to the Applicant that this does not represent their advice on this topic in all cases). Under these lower mortality rates the guillemot impact reduces to 3 individuals and the razorbill impact reduces to 1 individual.

Natural England, in their submission to the East Anglia ONE North and East Anglia TWO examinations at deadline 12¹, concluded that displacement of guillemot from the FFC SPA would not give rise to in-combination AEoI for all wind farms considered, including Norfolk Vanguard, Norfolk Boreas, East Anglia ONE North, East Anglia TWO and Hornsea Project Three (Natural England were unable to reach this conclusion when projects for which currently there is only preliminary assessment available were included, Hornsea Project Four, Dudgeon Extension and Sheringham Extension, due to the uncertainty regarding their figures).

9. Therefore the Applicant considers it is clear that any remaining impacts of the Project are extremely small and can be regarded as de minimis. Nonetheless, during the Examination and subsequently, the Applicant has undertaken a considerable amount of work to develop in-principle compensation proposals for the Project's predicted impacts. These have been provided without prejudice to the Applicant's position, detailed in submissions made throughout the Examination, that the wind farm will not give rise to AEoI for any European site, either alone or in-combination with other plans and projects.
10. More recently, stakeholders such as Natural England (NE) and the Marine Management Organisation (MMO) have questioned the operation of the de minimis rule in the context of any lasting or irreparable loss of habitat whose conservation is the objective justifying the designation of a site as an SCI/SAC.
11. The MMO, for example, in a position paper setting out its approach to the question of whether a project gives rise to an adverse effect on integrity, have stated:

"The MMO's view is that the uncompromising language of the Court of Justice of the European Union (CJEU) in its judgements, and particularly in Sweetman requires the MMO to conclude that the lasting and irreparable loss of the whole or part of a national habitat type whose conservation was the objective that justified the designation of the site as an SCI/SAC is an adverse effect on the integrity of the site. As such any project or plans which fall into this category can only be consented or licensed where the "imperative reasons of overriding public interest" (IROPI) process is followed and satisfied. The fact that new areas of habitat may be created elsewhere in the same site, even in circumstances where the creation of the new habitat will deliver a net beneficial effect, is immaterial. Given there is a loss of existing habitat, the plan or project has to be considered as having an adverse effect on the site.

¹ [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-005512-Natural%20England%20-%20Appendix%20A16c%20-%20NE%20Comments%20on%20Cumulative%20and%20In-Combination%20Collision%20Risk%20\[REP11-027\]%20Deadline%2012.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-005512-Natural%20England%20-%20Appendix%20A16c%20-%20NE%20Comments%20on%20Cumulative%20and%20In-Combination%20Collision%20Risk%20[REP11-027]%20Deadline%2012.pdf)

In our view, as the case law currently stands and in light of the uncompromising language used in the judgements of the CJEU, there is no scope for the MMO to apply any form of de minimis rule for projects involving any lasting and irreparable loss of habitat whose conservation was the object that justified the designation of the site, even where the amount of habitat to be lost is to be very small."

12. Stakeholders have advocated a strict approach to Article 6(3) of the Habitats Directive as to what amounts to an adverse effect on integrity, such that a project fails the Appropriate Assessment, and falls to be considered under Article 6(4) as a derogation, however small the long-term/permanent loss (often comprising less than 1% of the entire area of habitat) and whether or not that loss relates to priority natural habitat as defined by the Habitats Directive.
13. In the Applicant's view it is clear that there is a concept of de minimis impact under Article 6(3) of the Habitats Directive and hence it is not correct to suggest that any long-term or permanent adverse impact on a European site must automatically be treated as an "adverse effect on integrity" under Article 6(3). This is because, firstly, that view is not supported by Sweetman (No.1), and secondly because the possibility of de minimis adverse impacts in relation to the Habitats Directive is already recognised domestically in guidance and in case law and decisions.

1.1 Sweetman (No.1)

14. The opinion of Advocate-General Sharpston in Sweetman v An Bord Pleanala EU:C:2013:220 (Sweetman (No.1)) in fact supports the existence of a de minimis concept. At AG48 it states:

"The requirement that the effect in question be "significant" exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."
15. Although the opinion is here referring to the "screening" stage of Article 6(3) it is clear that a concept of "de minimis" effects is also applicable at the Appropriate Assessment stage.
16. Nor did the CJEU in that case support the strict approach apparently advocated by the Advocate General: it was not necessary for the CJEU to go that far, given that what was being lost in that case (limestone pavement) was priority habitat. There can be no justification for taking the view that any loss of habitat or negative effect on those elements which support the designation of a site, no matter how small the loss or effect, must be regarded as giving rise to an adverse effect on integrity.

1.2 Guidance

17. Reference is made to the possibility of de minimis adverse impacts in English Nature's Habitats Guidance Note 3²

"Proposals having no, or de minimis, effects can be progressed without further consideration under the Habitats Regulations."

18. De minimis impacts are also discussed in Natural England's Report NECR205³

"No two cases are the same. As already set out in section A.11 of this Report, the circumstances of each case must be taken into account in interpreting the decision. Moreover, it is not appropriate to apply the findings of one court decision as if it was a blanket rule to be applied regardless of the circumstances in every case. Thus, for example, it cannot be assumed that, on the basis of the Sweetman ruling alone (case C – 258/11), any loss of habitat, no matter how small, whether it be priority habitat or not, should be regarded as an adverse effect on site integrity, simply because in the circumstances of the Sweetman case, the loss of 1.47ha of the 270ha of limestone pavement in the SAC was ruled to be an adverse effect on the integrity of the SAC."

1.3 Case law

19. In domestic case law the existence of a de minimis concept was recognised in the context of the Habitats Directive in R (Morge) v Hampshire County Council [2010] PTSR1882, where the Court of Appeal, in considering the meaning of "disturbance" in Article 12 of the Habitats Directive stated (Ward LJ):

"Activity will not amount in law to disturbance at all if it is de minimis i.e. too negligible for the law to be concerned by it. Mr George QC, for the Claimant, submits that any activity above that minimal level is disturbance. I do not accept that submission... The disturbance does not have to be significant but, as para 38 of the Guidance explains, there must be some room for manoeuvre which suggests that the threshold is somewhere between de minimis and significant. It must be certain, that is to say, identifiable. It must be real, not fanciful. Something above a discernible disturbance, not necessarily a significant one, is required. Given that there is a spectrum of activity, the decision maker must exercise his or her judgement consistently with the aim to be achieved. Given the broad policy objection which I explored in para 27 above, disturbing one bat, or even two or three, may or may not

² Habitats Regulations Guidance Note 3 – the determination of likely significant effects under the Conservation (Natural Habitats etc) Regulations 1994

³ Small scale effects: how the scale of effects has been considered in respect of plans and projects affecting European sites – a review of authoritative decisions (29 February 2016).

amount to disturbance of the species in the long-term. It is a matter of fact and degree in each case."

20. In *Wealden DC v Secretary of State for Communities and Local Government* [2017] ENV.L.R.31 Jay J cited the Advocate General's opinion in *Sweetman* (No.1) in relation to *de minimis* impacts ([50]) and said that [53]:

"Competent authorities are quite entitled to use threshold levels and values in order to eliminate from further consideration de minimis environmental impacts which, on scientific evidence, fall short of engendering any relevant risk. However this is another point which will require development, de minimis is not a synonym for nugatory."

21. At [93] the Judge referred to such effects that could not be regarded as "*de minimis, or neutral, or be removed from scope*".

1.4 Secretary of State decisions

22. A number of decisions by the Secretary of State under the Planning Act 2008 support the *de minimis* concept. There are also a number of other decisions of relevance which are set out in the Small scale effects report (see above).

23. East Anglia THREE Offshore Wind Farm (7 August 2017) - in the Secretary of State's Appropriate Assessment findings in relation to the FFC pSPA he noted that the worst case in-combination estimate for impacts on gannet and kittiwake was just above that deemed acceptable for the Hornsea Two Offshore Wind Farm:

"a project for which a conclusion of no adverse effect on site integrity was reached. In view of the Development's revised contribution to the in-combination total, NE advised that "while [it is] not de minimis, [it] is so small as to not materially alter the significance or the likelihood of an adverse effect on the integrity of the SPA" (see the Secretary of State's decision at [4.12], and see the Examining Authority Report at [6.7.91], [6.7.94] and [6.7.109]).

24. This decision would suggest that both NE and the Secretary of State recognise the existence of a *de minimis* concept and, further, that impacts can even be judged to be above that *de minimis* level and still properly characterised as not giving rise to an adverse effect on integrity.
25. Rampion Offshore Wind Farm (16 July 2014) – the Examining Authority Report records NE's rejection of the level of collision risk as being *de minimis* "*ie too small to be concerned with*" ([4.2227]). This also suggests that NE do accept there to be a *de minimis* concept in this area.

26. Thanet Extension Offshore Wind Farm (1 June 2020) – the Secretary of State accepted the view of NE that a collision risk and barrier effects to relevant species:

"is beneath any threshold of significance and de minimis and such that there is no AEoI [adverse effect on integrity]"
27. This again suggests that NE and the Secretary of State accept the existence of a de minimis concept and that it can apply at the appropriate assessment stage.
28. In the Secretary of State's original decision for Norfolk Vanguard Offshore Wind Farm (1 July 2020, which was not quashed on HRA grounds) it states with regard to the HHW SAC (5.8):

"Having reviewed all the representations received during and after Examination, the Secretary of State agrees with a conclusion of no AEoI as the Applicant has demonstrated that the area of site affected will be relatively small (in the case of reef, kept to a minimum through micro-siting), any affected features are able to recover, and all cable protection will be removed at the time of decommissioning."
29. This further supports that the Secretary of State accepts the existence of a de minimis concept in that the size of the area affected is a factor to be taken into account in the HRA process.
30. In relation to AEoI on the AOE SPA arising from in-combination impacts, the Habitats Regulations Assessment (HRA) which accompanied the Norfolk Vanguard decision concludes:

"Having considered the information presented following closure of Examination, the Secretary of State does not agree that the Project in-combination will have an adverse effect on the lesser black-backed gull feature of the Alde-Ore Estuary SPA. Using NE's preferred collision risk modelling approach, the Secretary of State has concluded that the potential loss of a relatively very small number of birds through collision does not contribute in a significant way to the total number of birds predicted to be impacted in-combination. Although, the site has a 'restore' objective the potential loss of an additional three birds per year as part of an in-combination total will have a de minimus effect on that objective. The Secretary of State has therefore concluded that collision risk to lesser-black-backed gull from the proposed Development alone and in-combination would not represent an AEoI."
31. Similarly, in relation to AEoI on the kittiwake feature of the FFC SPA, the HRA concludes:

"The Secretary of State has considered the information presented by the Applicant during and post- Examination, along with the advice from NE and the views expressed by the RSPB and the recommendations of the ExA. He recognises the

precautionary nature of the NE approach to CRM upon which this assessment is based. He is also aware of the potential for lower numbers of predicted collisions than previously calculated based on built scenarios as opposed to the assessed or consented scenarios (the 'head room'). He considers the potential loss of no more than 21 kittiwakes per year is de minimis in that it will not have any material effect to predicted total of in-combination impacts nor alter the significance or the likelihood of an adverse effect on the integrity of the SPA.

On the basis of the above, the Secretary of State has concluded that the project will not have an adverse in-combination effect on the integrity of the kittiwake feature of the Flamborough and Filey Coast SPA."

32. The approach to HRA taken by the Secretary of State in the Norfolk Vanguard decision to concluding no AEol in-combination due to a contribution that was de minimis or not discernible, follows the approach taken on East Anglia Three where, as stated above, Natural England also advised that the contribution to the in-combination impact would not materially alter the significance or the likelihood of an AEol.
33. It is recognised that the Secretary of State has since concluded an in-combination AEol for the kittiwake feature of the FFC SPA in respect of the Hornsea Project Three Offshore Wind Farm, however, compensation has also been secured for that impact such that it is reasonable for the Secretary of State to exercise discretion to discount Hornsea Project Three's contribution from future in-combination assessments. Whilst it is also recognised that Natural England's advice has changed since East Anglia Three, and Natural England now advise that there is an in-combination AEol of the FFC SPA (and that this has existed since the determination of Hornsea Project Two), the Applicant has made numerous evidence based submissions during the course of the examination as to why this is not the case.
34. Overall therefore, there can be little doubt that there is a concept of de minimis impact which applies in relation to HRA, and which can be applied in both the screening and appropriate assessment stages of the HRA process. The Applicant is firmly of the view that no AEol of any European site arises as a result of the Project, and that the Secretary of State is entitled to accept the Applicant's position in this respect.
35. Notwithstanding this, the Applicant has responded to each of the relevant questions raised by the Secretary of State at paragraphs 17 to 22 of his letter, detailed in numerical order in Section 3 of this document.

36. In addition, responses to the Secretary of State's request for additional information at paragraphs 13 to 16 (inclusive) of his letter are included in Section 2 of this document.

2 Secretary of State's Requests for Additional Information

2.1 Cumulative Impacts at the Substation

Paragraph number	Paragraph text:	Applicant's Response:
13	<p>Further to the procedural decisions set out above, the Secretary of State requests that the Applicant should provide any additional information on the cumulative impacts of the proposed Norfolk Vanguard project that will assist him in considering the impacts of the proposals to locate the Norfolk Vanguard substation(s) at Necton. The additional information should include but not necessarily be limited to assessments of landscape and visual effects, construction and operational noise effects, the impacts of artificial lighting at the substation sites and any potential water run-off from the substations. That information might include any material which was produced as part of the application, or during the examination, of the Norfolk Boreas project which the Applicant considers may be relevant to the Secretary of State's consideration of the cumulative effects of the substation infrastructure (including any proposed mitigation). As indicated in paragraph 11 above, the Secretary of State will, in due course, invite Interested Parties to comment on information provided by the Applicant and to provide their own information which will be considered in the decision-making process.</p>	<p>The Norfolk Vanguard Environmental Statement (ES) includes an assessment of cumulative impacts of Norfolk Vanguard and Norfolk Boreas, including the proposals to co-locate the onshore project substations at Necton. As detailed in ES Chapter 4 Site Selection and Alternatives [NV APP-238] the project has undergone an extensive site selection process which has involved incorporating environmental considerations in collaboration with the engineering design requirements. Constraints mapping and sensitive site selection has been undertaken to avoid a number of impacts, or to reduce impacts as far as possible. With respect to the onshore project substation this includes adhering to the Horlock Rules, in accordance with which the co-location of the onshore project substations for both Norfolk Vanguard and Norfolk Boreas was part of the embedded mitigation to keep the development contained within a localised area, and in doing so, minimise the extent of potential impacts.</p> <p>The Norfolk Boreas Environmental Statement (ES) also included an assessment of cumulative impacts with Norfolk Vanguard. The Norfolk Boreas ES assessed two scenarios. It is Norfolk Boreas Scenario 1 which is the scenario where both the Norfolk Vanguard and Norfolk Boreas projects proceed to construction, so this is the relevant scenario for considering cumulative impacts. The following onshore chapters from the Norfolk Boreas ES contain additional information on cumulative impacts for consideration, and the Norfolk Boreas examination library reference is given for each document in square brackets;</p> <ul style="list-style-type: none"> • Chapter 19 Ground Conditions and Contamination [NB APP-232]; • Chapter 20 Water Resources and Flood Risk [NB APP-233]; • Chapter 21 Land Use and Agriculture [NB APP-234]; • Chapter 22 Ecology [NB APP-235]; • Chapter 23 Ornithology [NB APP-236]; • Chapter 24 Traffic and Transport [NB APP-237]; • Chapter 25 Noise and Vibration [NB APP-238]; • Chapter 26 Air Quality [NB APP-239]; • Chapter 27 Human Health [NB APP-240]; • Chapter 28 Onshore Archaeology and Cultural Heritage [NB APP-241];

Paragraph number	Paragraph text:	Applicant's Response:
		<ul style="list-style-type: none"> Chapter 29 Landscape and Visual Impact Assessment [NB APP-242]; Chapter 30 Tourism and Recreation [NB APP-243]; Chapter 21 Socio-economics [NB APP-244]; and Chapter 33 Onshore Cumulative Impacts [NB APP-246]. <p>The Applicant also submits for consideration the following accompanying Norfolk Boreas ES Figures which contain the location of the Norfolk Boreas onshore project substation and the final shared onshore cable route (as amended during the Norfolk Vanguard examination) and the Norfolk Boreas ES Appendices:</p> <ul style="list-style-type: none"> Chapter 19 – Figures 19.1 to 19.6 [NB APP-416 to APP-421]; Chapter 20 – Figures 20.1 to 20.6 [NB APP-422 to APP-427] and Appendices 20.1 to 20.2 and 20.4 [NB APP-586 to APP-587, APP-589]; Chapter 21 – Figures 21.1 to 21.6 [NB APP-428 to APP-433]; Chapter 22 - Figures 22.1 to 22.9 [NB APP-434 to APP-442] and Appendices 22.1, 22.2 to 22.5, 22.8 and 22.10 [NB APP-592, APP-595, APP-599, APP-600 to APP-603, APP-606 and APP-608]; Chapter 23 - Figure 23.1 [NB APP-446] and Appendix 23.1 [NB APP-610]; Chapter 24 - Figures 24.1 to 24.2, 24.4 to 24.8 and 24.11 [NB APP-452 to APP-453, APP-455 to APP-459 and APP-462] and Appendices 24.2 to 24.18, 24.32 and 24.35 [NB APP-617 to APP-633, APP-647 and APP-650]; Chapter 25 - Figures 25.1 and 25.2 [NB APP-469 and APP-470] and Appendices 25.2 and 25.3 [NB APP-658 and APP-659]; Chapter 26 - Figures 26.3 and 26.4 [NB APP-473 and APP-474] and Appendixes 26.2 to 26.4 [NB APP-662 to APP-664]; Chapter 28 - Figures 28.1 to 28.7 [NB APP-477 to APP-483] and Appendices 28.4 to 28.8 [NB APP-672 to APP-676]; Chapter 29 – Figures 29.1 to 29.11 and 29.23 to 29.34 [NB APP-484 to APP-495 and APP-509 to APP-520] and Appendices 29.1 and 29.2 [NB APP-677 and APP-678]; Chapter 30 - Figures 30.2 to 30.4 [NB APP-534 to APP-536]; Chapter 31 – Appendices 31.3 [NB APP-682]. <p>Each ES Chapter contains an assessment of cumulative impacts, including any potential cumulative impacts with Norfolk Vanguard and a summary of the cumulative impact assessment is provided in</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>Chapter 33 [APP-246]. The <i>'Summary of Norfolk Boreas Environmental Statement Information with respect to Cumulative Impact (ExA.AS-2.D11.V1)'</i> submitted by the Applicant on 2 August 2021 in response to the Secretary of State's request for additional information, provides a summary of the information from the Norfolk Boreas ES for all topics which are relevant to potential cumulative impacts at the onshore project substation. In conclusion, the findings of the Norfolk Boreas cumulative assessment are consistent with those presented in the Norfolk Vanguard ES and there is no change to the significance of impacts as a result of the further information available from the Norfolk Boreas ES. The only significant adverse cumulative effect relates to localised and reversible Landscape and Visual Impact (LVIA) effects in select locations around the substation area which are the same effects as identified for the projects alone.</p> <p>The Norfolk Boreas LVIA demonstrated that despite the scale of the project, any significant effects would occur in relatively contained areas only, with the majority of landscape and visual receptors either undergoing non-significant effects or no effect. Potential significant cumulative effects were identified as a result of the operation of the Norfolk Boreas and Norfolk Vanguard onshore project substations on the landscape character units in which the onshore project substations would be located and non-residential receptors at two locations within a very localised area, where there would be a view of the installed infrastructure. This is the same as the effects at these receptors identified for the projects alone. However, landscape mitigation planting is proposed which would reduce the localised effects to non-significant within 20 to 25 years (depending on the receptor location). Beyond these timeframes the cumulative effects would become beneficial as the mitigation planting would enhance the local visual amenity.</p> <p>Potential cumulative impacts of the onshore project substations for Norfolk Vanguard and Norfolk Boreas were also fully considered as part of the Norfolk Boreas examination. During the Norfolk Boreas examination, Norfolk Boreas Limited responded to queries and provided clarification on a number of topics, which are relevant to potential cumulative impacts at the onshore project substation. The following documents submitted as part of the Norfolk Boreas examination contain additional information on cumulative impacts for consideration (Norfolk Boreas examination library reference in square brackets);</p> <ul style="list-style-type: none"> • Applicant's response to Examining Authority's Written Questions [NB REP2-021]; • Written Summary of the Applicant's Oral Case at Issue Specific Hearing 3 – [NB REP4-013]; • Applicant's responses to the Examining Authority's Further Written Questions [NB REP5-045];

Paragraph number	Paragraph text:	Applicant's Response:
		<ul style="list-style-type: none"> • Applicant's comments on Deadline 4 submission and additional submissions [NB REP4-036]; • Comments on Deadline 5 submissions [NB REP6-013]; • Comments on Deadline 7 submissions [NB REP7-016]; • Comments on Deadline 8 submissions [NB REP9-011]; • Applicant's response to Examining Authority's Fourth Written Questions [NB REP10-034]; • Comments on Deadline 10 submissions and Other submissions [NB REP11-008]; • Applicant's response to Open Floor Hearing 3 [NB REP13-105]; and • Comments on Relevant Representations [NB AS-024]; <p>The document '<i>Information from the Norfolk Boreas Examination (ExA.AS-1.D11.V1)</i>' submitted by the Applicant on 2 August 2021 in response to the Secretary of State's request for additional information, summarises the information provided during the Norfolk Boreas examination for the key areas of Landscape and Visual, Operational Noise, Artificial Lighting, and Surface Water Management, which are relevant to the potential cumulative impacts.</p> <p>A full list of all the documents from the Norfolk Boreas development consent application process and referred to by the Applicant in response to the Secretary of State's request for additional information, with links to the Norfolk Boreas examination library, is presented in the document '<i>Norfolk Boreas Document Index (ExA.AS-4.D11.V1)</i>' submitted by the Applicant on 2 August 2021.</p>

2.2 Co-operation Agreement

Paragraph number	Paragraph text:	Applicant's Response:
14	In line with the request made by the Secretary of State on 28 April 2021 with regard to the proposed Norfolk Boreas project, the Applicant is asked to provide any further details which are available in respect of the proposed cooperation agreement between Norfolk Boreas Limited and Norfolk Vanguard Limited mentioned by the Applicant in its response to the Examining Authority's Written Question 2.9.3.4. The	<p>Co-Operation Agreement</p> <p>As detailed in the response to the Secretary of State's request for the Norfolk Boreas Project (ExA.PD.D19.V1), Norfolk Vanguard and Norfolk Boreas are being developed together in order to optimise synergies and efficiencies between the two projects. Norfolk Vanguard Limited and Norfolk Boreas Limited are subsidiaries of Vattenfall Wind Power Ltd (VWPL). This ownership model therefore facilitates collective working and co-operation between the project companies.</p> <p>Whilst still in draft form, and with the precise terms being confidential, the Co-operation Agreement (to which VWPL is also a party) currently contains an overarching principle of co-operation and good faith in respect of each parties' (Norfolk Vanguard Limited's and Norfolk Boreas Limited's) obligations and rights</p>

Paragraph number	Paragraph text:	Applicant's Response:
	Applicant is asked to indicate how, if at all, the cooperation agreement is intended to address design issues for the Norfolk Boreas and Norfolk Vanguard projects at the Necton substation to ensure that the cumulative landscape and visual impacts are minimised.	<p>under the DCOs. This would include a requirement to consult one another in advance of any submission to discharge a requirement under the DCOs. The Co-operation Agreement will be finalised and completed post-consent once the status of both projects and their interactions are established.</p> <p>Design & Access Statement</p> <p>As the Secretary of State (SoS) recognises, matters of co-operation were raised by the Examining Authority for the Norfolk Boreas project specifically in connection with the co-ordination of the design of the onshore project substations for both projects, which will be co-located under Scenario 1, in order to ensure that cumulative landscape and visual impacts are minimised.</p> <p>The Norfolk Boreas and Norfolk Vanguard Design and Access Statements (DAS) ([REP14-014] and NV document 8.3, Version 2, submitted 2 August 2021, respectively) outline the design principles which will be adhered to in developing the detailed design of the onshore project substations for both projects. For both projects the DAS states:</p> <p><i>‘in order to minimise visual impacts from the permanent onshore electrical infrastructure as far as possible, the appropriate building design and materials will be considered, to ensure blending with the local environment and minimisation of impacts as far as possible’ (paragraph 38 and paragraph 31, respectively) .</i></p> <p>The Norfolk Boreas DAS [REP14-14], at paragraph 43, also commits that:</p> <p><i>‘Under Scenario 1 the design and development of the onshore infrastructure will also be considered cumulatively with Norfolk Vanguard and consideration will be given to a design approach which can be applied across both projects’.</i></p> <p>The Norfolk Vanguard DAS (document 8.3, Version 2, paragraph 34) has been updated to include a reciprocal commitment:</p> <p><i>‘In the event that the Norfolk Boreas project (a ‘sister project’ to Norfolk Vanguard also being developed by Vattenfall Wind Power Ltd) proceeds to construction, the design and development of the onshore infrastructure will also be considered cumulatively with Norfolk Boreas and consideration will be given to a design approach which can be applied across both projects.’</i></p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>The Norfolk Boreas DAS also includes a commitment to a Design Review Process and production of a Design Guide (as detailed in section 5.3.6 of the Norfolk Boreas DAS) which will be conducted at an early stage. The Norfolk Vanguard DAS (document 8.3, Version 2) has been updated to include the commitment to undertake the Design Review Process (included in section 6.3.6) and further confirms in paragraph 59 that:</p> <p><i>'In the event that Norfolk Boreas proceeds to construction the Design Guide will take a holistic approach by presenting details of the onshore project substations for both projects. It will set out a design approach and mitigation measures which can be applied across both onshore project substations to minimise the impacts of the onshore project substations alone and cumulatively.'</i></p> <p>In line with the commitments in the DAS, the design and landscape approach developed during the Design Review Process will take a holistic approach considering both projects. It will set out the design and landscape approach and identify and integrate mitigation measures in order to reduce potential effects on landscape character and visual amenity, including potential cumulative effects. A Preliminary Design Report for Norfolk Boreas was provided during the course of the examination (Appendix 3 of the DAS, [REP14-014]) which set out the initial parameters regarding the design options for the converter buildings at the onshore project substation. The principles set out in this report are also applicable to Norfolk Vanguard and have been included in the updated Norfolk Vanguard DAS (document 8.4, Version 2) as Appendix 3.</p> <p>As the parent company for both Norfolk Vanguard Limited and Norfolk Boreas Limited, VWPL can ensure that the Design Guide is developed for both Norfolk Boreas and Norfolk Vanguard holistically. In response to the Secretary of State's request for the Norfolk Boreas Project (ExA.PD.D19.V1) Norfolk Boreas Limited provided a masterplan (document 8.27) which shows how the onshore project substations for both projects will be developed. The same masterplan is applicable to Norfolk Vanguard and is included as document 8.27 in the Applicant's response, dated the 2 August 2021, to the Secretary of State's request for additional information.</p> <p>The Onshore Project Substation (OPS) Masterplan drawing (PB4476-009-017-001, in document 8.27) shows the co-location of infrastructure, zoning of the onshore project substation footprints and how the indicative landscaping proposals have been designed to work together across both projects and with existing landscape features. The written principles, outlined in section 1.1 of document 8.27, set out the</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>approach for ensuring that the design and development of the onshore infrastructure at the onshore project substations is considered holistically for Norfolk Vanguard and Norfolk Boreas Scenario 1.</p> <p>Developing the detailed design of each onshore project substation in accordance with the principles of the OPS Masterplan will enable the cumulative effects of both projects to be mitigated during the detailed design process. The embedded mitigation measures shown on the OPS Masterplan, including strategic landscape planting, will reduce potential effects on the local environment, including effects on landscape character, visual amenity, ecology and hydrology. The Design Guide will set out, and draw on, the existing local context and landscape character to explore options for building colour and materials and different landscaping features and species to inform the final design of the onshore project substations in accordance with the principles of the OPS Masterplan.</p> <p>DCO Requirement</p> <p>In line with the response to the Secretary of State's request for the Norfolk Boreas Project (ExA.PD.D19.V1) the Applicant proposes that the OPS Masterplan (see document 8.27) is secured in the Norfolk Vanguard DCO as a certified document, which will ensure that the detailed design is developed in accordance with the principles of the OPS Masterplan should the SoS consider this to be appropriate.</p> <p>This could be secured through a new limb of Requirement 16(4) as follows (with new text in red):</p> <p>16...</p> <p><i>(4) Any details provided by the undertaker pursuant to paragraph (2) must:</i> <i>(a) accord with the design and access statement and be within the Order limits; and</i> <i>(b) be supported by a statement illustrating how the details submitted accord with the principles of the OPS Masterplan and have been informed by a strategic approach to mitigate cumulative impacts arising from the onshore project substation and the Norfolk Boreas Onshore Project Substation.</i></p> <p>With new definitions as follows:</p> <p><i>"OPS Masterplan" means the document certified as the OPS Masterplan by the Secretary of State for the purposes of article 37 of the Order;</i></p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p><i>"Norfolk Boreas Onshore Project Substation" means the facility containing electrical equipment including (but not limited to) power transformers, switchgear, welfare facilities, access, fencing and other associated equipment, structures or buildings as defined in the Norfolk Boreas Offshore Wind Farm Order 202X for scenario 1 of the Norfolk Boreas offshore wind farm;</i></p> <p>During the Norfolk Boreas examination further detail was included in Requirement 18 (2), to clarify that the final landscape management scheme will also include provision for a scheme of sustainable drainage and integration of guidance on the materials and colours of the onshore project substation, which will be developed through the Design Review Process, as outlined in the OLEMS section 6.7 [REP14-021].</p> <p>For clarity the Applicant proposes a reciprocal minor update to Requirement 18 (2) as follows (with new text in red):</p> <p>18.. <i>(2) The landscaping management scheme must include details of proposed hard and soft landscaping works appropriate for the relevant stage, including—</i> <i>...</i> <i>i) sustainable drainage measures integrated into the details of hard and soft landscaping works at the onshore project substation (Work No. 8B); and</i> <i>j) guidance on the use of materials and colours relating to the design of the onshore project substation (Work No. 8A).</i></p> <p>Conclusion In summary, the Co-operation Agreement between Norfolk Vanguard Limited, Norfolk Boreas Limited, and VWPL will contain general duties of co-operation and good faith, including consultation prior to discharge of requirements under the DCO. The draft Co-operation Agreement will be finalised and completed post-consent. The Norfolk Vanguard DAS has been updated to align with the Norfolk Boreas DAS which includes the requirement for a Design Guide and secures principles of co-operation in relation to the design process between Norfolk Vanguard and Norfolk Boreas. This will also be facilitated by VWPL as the parent company of Norfolk Boreas Limited and Norfolk Vanguard Limited, in line with the strategic approach to co-location taken to date. Notwithstanding this, the Applicant has submitted an OPS Masterplan (document 8.7) to be secured as a certified document under the dDCO. This illustrates and defines the principles for the development of the design for the onshore project substations across both the Norfolk Vanguard and Norfolk Boreas sites. The Applicant is content for this</p>

Paragraph number	Paragraph text:	Applicant's Response:
		to be secured, along with a requirement for the Applicant to demonstrate the strategic approach taken to mitigate potential cumulative effects at the onshore project substations, in a new limb to Requirement 16 (4) of the dDCO as set out above. The Applicant also proposes a minor update to Requirement 18 (2). These amendments to the dDCO will then mirror the updates proposed to the Norfolk Boreas dDCO, which contain reciprocal requirements in relation to the Design Review and OPS Masterplan approach.

2.3 Offshore Transmission Network Review

Paragraph number	Paragraph text:	Applicant's Response:
15	In respect of the OTNR, the Secretary of State will consider any relevant matters arising from that review when he takes his decision. He requests the Applicant to consider whether, in the context of the 'Early Opportunities' workstream of the OTNR as mentioned in the joint BEIS-Ofgem letter of 18 December 2020, it has identified any opportunities for a more co-ordinated approach to the design and delivery of the transmission infrastructure for the Norfolk Vanguard and Norfolk Boreas projects, including with other projects in the same region.	<p>The Applicant has participated proactively in the Offshore Transmission Network Review (OTNR) process, including the 'Early Opportunities' workstream run by the ESO on an 'opt-in' basis, since its initiation in July 2020. The applicant is supportive of the OTNR's aim to deliver greater coordination of our onshore and offshore transmission networks in order, as far as possible, to reduce environmental impacts and deliver cost savings for consumers as we seek to decarbonise our energy system in line with the Government's target of 40GW of offshore wind by 2030, and potentially 100GW by 2050, to support net zero.</p> <p>To enable the OTNR to design effective interventions that target projects at different stages of their development journeys, The Early Opportunities, Pathway to 2030, and Enduring Regime workstreams divide policy development and industry engagement into three temporal workstreams. The Early Opportunities workstream aims to identify and facilitate opportunities for increased coordination in the near term; focused on in-flight projects which are advanced in their development and where requirements for significant transmission regime change would be inappropriate within project timescales, and which could compromise the Government's ability to meet its 2030 targets.</p> <p>As the Norfolk Vanguard project is in very late-stage development, the Applicant has been working with the ESO to explore Early Opportunity options that could be delivered within the project timelines and which could be incorporated into the existing project as defined by the parameters of the Norfolk Vanguard development consent application, existing regulatory frameworks, and using available technology, without risking the delivery of the UK Government's targets.</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>As with all OTNR explorations for solutions under any of the discrete workstreams, including “Early Opportunities”, parties enter into discussions with BEIS, OFGEM and the ESO commercially in confidence. However, the Applicant can state that it has identified and put forward solutions that could potentially enhance offshore coordination, and /or reduce the need for onshore grid reinforcement for future projects. For example, should as yet unidentified projects come forward, within an appropriate timeframe, there is a possibility that if infrastructure is consented for Vattenfall’s Norfolk Projects this may be engineered to accommodate some additional capacity. The solutions put forward would be accommodated within the parameters of the existing Norfolk Vanguard development consent application. Whilst such potential solutions do not currently offer a coordination opportunity to a known party, the Early Opportunities workstream recognises that the identity of all parties involved in any co-ordination opportunity may not be known at this stage. The Applicant remains open to tangible opportunities which could use the Norfolk Vanguard infrastructure in the future, and will continue to play a proactive role in the OTNR process.</p> <p>The Applicant would note that, as with many of the examples put forward in OFGEM’s consultation document⁴ (published 14/07/2021 – “Changes intended to bring about greater coordination in the development of offshore energy networks”) – the solutions put forward do not change the principle of needing infrastructure to enable connection of offshore projects into the National Grid.</p> <p>Notwithstanding the above, as the development of the project began in 2015/16, the Applicant has necessarily worked within the regulatory bounds of the current system, which has been designed around radial offshore connections. Prior to the OTNR, and in consultation with local stakeholders, the applicant has proactively provided a coordinated ‘3.6GW Norfolk Project’ and has continuously sought to reduce the onshore impact of the transmission works. The alternatives considered in this respect and the decision to take a strategic approach to minimise impacts is summarised in Table 5.1 of the Design and Access Statement (document 8.3, Version 2, submitted 2 August 2021).</p> <p>Coordination to date:</p> <p>The Applicant considers that, within the confines of the current regulatory regime, delivery of both the Norfolk Vanguard and Norfolk Boreas projects via one shared underground cable corridor and a single landing point for both projects, as well as one onshore enabling works campaign, with buried ducts being installed in sections for the entire capacity of both projects at the same time, will provide the</p>

⁴ https://www.ofgem.gov.uk/sites/default/files/2021-07/OTNR%20Ofgem%20Consultation_Jul%202021_Final%20%281%29.pdf

Paragraph number	Paragraph text:	Applicant's Response:
		<p>most coordinated approach to installing 3.6 GW of offshore wind undertaken in the UK to date. Pre-ducting reduces wholesale trenching activities from 8 years to 2 years and a sectionalised approach minimises disruption to a localised area. In addition, the decision to deploy HVDC transmission technology has reduced the width of the onshore temporary easement from 100m to 45m (by 55%) with a reduction in the permanent easement from 54m to 20m (by 63%). This has also reduced the required number of onshore cables from up to 36, to up to 8 cables in total, for both Norfolk Vanguard and Norfolk Boreas. These commitments have the effect of saving resources and energy, minimising impact footprint and reducing installation time, with the overall effect of minimising environmental impacts. In this manner, if both the Vanguard and Boreas projects are consented, the coordinated approach and use of HVDC transmission technology, reduces environmental impacts overall, whilst increasing certainty on delivering renewable energy in line with the UK's targets and providing cost savings to the UK consumer.</p> <p>Existing coordination with other projects in development</p> <p>The Applicant is working with other developers to secure appropriate co-ordination of construction activities (and related impact mitigations) at and around the locations where onshore cable corridors will eventually cross. The Applicant is progressing a Co-operation Agreement with the developer of the Hornsea Project Three scheme, addressing a number of areas where there is potential to reduce local onshore impacts. These topics include (i) co-ordination of construction programmes, to minimise and mitigate periods of co-incident peak haulage activity for the two projects where possible; (ii) co-ordination of stakeholder engagement plans and activities to minimise stakeholder time investment (iii) sharing of pre-construction survey works in relation to the crossing point and access routes to minimise on-site activities; and (iv) shared responsibility for implementation and operation of temporary traffic management schemes in sensitive locations close to the crossing. Many commitments are already secured within the relevant DCO (draft DCO in the case of Norfolk Vanguard and Norfolk Boreas) construction and traffic management plans where all three parties have sought take a consistent approach to commitments as far as possible in relation to the themes identified above. The Co-operation Agreement represents the overarching document which will formalise the mechanisms to work together to deliver those commitments secured throughout the project plans.</p> <p>The Applicant and Norfolk Boreas Limited have also engaged with Equinor to understand proposals in relation to cable crossing points between Norfolk Vanguard and Norfolk Boreas and the Dudgeon Shoal and Sheringham Extension Projects (DEP and SEP). The Applicant (and Norfolk Boreas Limited) will continue to engage with Equinor with a view to securing a crossing agreement in due course. The</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>Applicant has also responded to the recent DEP and SEP Section 42 consultation to identify key areas of overlap between the projects and will continue to engage on these matters so that any potential for coordination can be identified where appropriate as the construction plans for DEP and SEP (currently in the early stages of development) continue to develop.</p> <p>Finally, the Applicant is continuing to engage, along with Norfolk Boreas Limited, with ScottishPower Renewables in respect of possible opportunities to deliver HRA compensation jointly with East Anglia ONE North and East Anglia TWO, should compensation be required by the SoS for any of these projects.</p>

2.4 Cumulative and In-Combination Effects with Dudgeon and Sheringham Shoal Extension Projects

Paragraph number	Paragraph text:	Applicant's Response:
16	<p>In relation to the proposed Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects, the Secretary of State wishes to consider whether there is any additional information in respect of those projects that is relevant to his consideration of the re-determination of the Norfolk Vanguard project. In the first instance, therefore, he requests that the Applicant should provide any additional information relating to those projects which it thinks is relevant to his consideration of the Norfolk Vanguard project re-determination.</p>	<p>The Norfolk Vanguard application for development consent was submitted in June 2018 and was examined between December 2018 and June 2019. The Dudgeon Extension Project (DEP) and the Sheringham Shoal Extension Project (SEP) Preliminary Environmental Information Report (PEIR) and Draft Information for Habitats Regulations Assessment (HRA)⁵ were both published in April 2021. These include a preliminary assessment of the cumulative and in-combination impacts with Norfolk Vanguard.</p> <p>In response to the SoS's request, the Applicant has reviewed the DEP and SEP PEIR documentation and the Draft Information for HRA. Consideration has been given to the potential for likely significant impacts to arise, as a result of DEP and SEP when considered cumulatively with Norfolk Vanguard, as well as the potential for adverse effects on integrity to arise in respect of any European sites when DEP and SEP is considered in-combination with Norfolk Vanguard. This review is included as an additional submission to this response: Updated Information on Cumulative and In-Combination Effects with Dudgeon and Sheringham Shoal Extension Projects (document reference ExA.AS-3.D11.V1). The review undertaken is, of course, necessarily high level since at this stage only <u>preliminary</u> and <u>draft</u> information is available for DEP and SEP.</p>

⁵ <https://sepanddep.commonplace.is/proposals/11-peir-documentation>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>In summary offshore, the DEP and SEP wind farm sites are located approximately 60km from Norfolk Vanguard at their closest point. Furthermore the construction programmes offshore (specifically piling activity) do not overlap. Therefore the Applicant considers that there is little or no chance for any significant cumulative effects to occur across the majority of offshore EIA topics. The Applicant notes that the CIA completed for the DEP and SEP PEIR concludes that no cumulative effects would occur at all for: Marine Geology, Oceanography and Physical Processes and marine sediment and water quality.</p> <p>The PEIR concluded that DEP and SEP could contribute to cumulative impacts in the following topic areas: Benthic and Intertidal Ecology, Marine Sediment and Water Quality, Commercial Fisheries, Marine Mammals, Offshore Archaeology, Aviation and Radar and Petroleum Industry and Other Marine Users; however, Norfolk Vanguard was not identified as a project that would contribute to that cumulative impact.</p> <p>The PEIR does identify possible cumulative impacts for fish and shellfish ecology in respect of underwater noise, habitat loss and introduced hard substrate. However, the impacts are all assessed as being not significant in EIA terms. The Applicant considers that although Norfolk Vanguard is included within the CIA, due to the considerable distance between the wind farms and that construction timescales (particularly piling activity) do not overlap, the contribution of Norfolk Vanguard to these impacts would be extremely small.</p> <p>The PEIR for DEP and SEP screened in cumulative ornithological impacts due to the risks of operational displacement and collision with other UK offshore wind farms, including Norfolk Vanguard. The impacts are all assessed as being not significant in EIA terms and the Applicant agrees with these conclusions. Notwithstanding this, the Applicant has included the DEP and SEP PEIR collision and displacement estimates in the updated cumulative tables requested by the SoS (document 8.26, ExA; IROPI; 11.D11.3.App3), since Natural England has requested their inclusion in recent project assessments.</p> <p>The potential for adverse effects on integrity to arise as a result of DEP and SEP in-combination with Norfolk Vanguard was also considered. The DEP and SEP Draft Information for HRA concluded that there would be no adverse effect on integrity for any European site as a result of in-combination impacts with Norfolk Vanguard. Having reviewed this the Applicant agrees that, due to the distances between the projects, the lack of temporal overlap in construction activity and the lack of combined</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>spatial overlap with European sites, there will be no adverse effect on integrity from DEP and SEP in combination with Norfolk Vanguard.</p> <p>Onshore DEP and SEP will make landfall at Weybourne in North Norfolk and propose to install a 60km buried cable system which heads in a southerly direction between the landfall at Weybourne and the grid connection south of Norwich. Three construction scenarios are presented for DEP and SEP, showing an earliest construction start date for DEP and SEP as 2025 but which could start as late as 2028.</p> <p>Norfolk Vanguard will make landfall at Happisburgh in North Norfolk, with a 60km onshore buried cable system that heads in a westerly direction between landfall at Happisburgh and the grid connection point near Necton. The Norfolk Vanguard onshore construction works are programmed to be undertaken between 2022 and 2025, with peak construction activity occurring in 2022/2023 associated with the cable duct installation and substation civil engineering works.</p> <p>The Norfolk Vanguard onshore substation location near Necton is approximately 30km from the proposed DEP and SEP onshore substation site options at Norwich, and the proposed two landfall locations are also approximately 30km distance from one another; however, there is a physical overlap of the Norfolk Vanguard and DEP and SEP cable routes where they cross in arable land to the east of Cawston.</p> <p>Given that there would be no overlap of peak construction activities between DEP and SEP and Norfolk Vanguard (which are programmed to be at least two years apart) there is limited scope for any significant cumulative impacts to be realised. In any event the majority of potential impacts would be localised to the area in proximity to the crossing point of the onshore cable routes, which is located in arable land away from any sensitive receptors.</p> <p>Within the DEP and SEP PEIR the preliminary cumulative impact assessment concludes that there would be no significant cumulative impacts with Norfolk Vanguard for any of the onshore EIA topics, either related to the localised effects at the point where the onshore cable routes cross, or to wider effects associated with construction such as traffic. Having reviewed the information provided within the DEP and SEP PEIR the Applicant also concludes that there are no likely significant cumulative effects for any of the onshore EIA topics.</p>

Paragraph number	Paragraph text:	Applicant's Response:
		In summary the Applicant has reviewed the information that is available in the DEP and SEP PEIR and Draft Information for HRA and generally agrees with the conclusions reached in both the cumulative impact assessments for EIA and the in combination effects assessments for HRA. For clarity following the Applicant's review of the information provided, the Applicant concurs that there would be no adverse likely significant cumulative effects for any onshore or offshore topics and that there will be no adverse effect on integrity as a result of in combination effects on European sites.

3 Habitats Regulations Assessment

3.1 Alde-Ore Estuary Special Protection Area

Paragraph number	Paragraph text:	Applicant's Response:
17	<p>Alde-Ore Estuary Special Protection Area ("SPA")</p> <p>In line with the request made with regard to the proposed Norfolk Boreas project, in relation to the in-combination impacts on the lesser black-backed gull feature of the AldeOre SPA, and in addition to the In Principle Compensation Measures submitted as part of the application, the Applicant is requested to provide the following information in consultation with Natural England:</p> <ul style="list-style-type: none"> • Details of any strategic compensation options considered; • Evidence of how any proposed compensation site(s) will be acquired/leased; • An implementation timetable for when the compensation measures will be 	<p>The Applicant has provided a full response, with the additional requested material, in the updated In Principle Habitats Regulations Derogation Provision of Evidence Appendix 2 Alde-Ore Estuary SPA In Principle Compensation (document reference 8.24, version 2). Further details of the proposed compensation have been provided, including an update on strategic compensation options and landowner negotiations. There may be opportunities to deliver this compensation in collaboration with other wind farm developers and this has been allowed for in the plans. An implementation timetable has been provided which sets out the planned sequence of compensation and how this relates to wind farm construction and operation. Estimated costs and details on funding have also been included.</p> <p>However, the Applicant remains firmly of the view that the Project does not give rise to AEoI on the AOE SPA. The basis for this conclusion, as set out in the above noted document and in the Applicant's submissions during and subsequent to the Examination, is that the predicted collision risk for lesser black-backed gull is very small (2.6 individuals) and even this figure contains considerable over-precaution in the modelling parameter values and assumptions in the assessment (see document reference [REP8-067]). Hence, there is a very high probability that the impact will be even smaller than the assessed estimate, and this will clearly not be discernible against natural population variations and will be insufficient to give rise to AEoI. In fact, the SoS determined that there was no AEoI for the Galloper offshore wind farm even though its collision risk estimates were much higher than they are for</p>

Paragraph number	Paragraph text:	Applicant's Response:
	delivered and achieve their objectives in relation to the first operation of the wind farm.	Norfolk Vanguard, being 119 for the Galloper project alone, and an in-combination risk for Galloper of 270-357 (for Norfolk Vanguard it is 2.6 for project alone and 53 in-combination).

3.2 Flamborough and Filey Coast Special Protection Area

Paragraph number	Paragraph text:	Applicant's Response:
18	<p>Flamborough and Filey Coast Special Protection Area ("SPA")</p> <p>The Secretary of State's determination of Hornsea Project Three Offshore Wind Farm 3 concluded that the development would have an adverse effect on the kittiwake feature of the Flamborough and Filey Coast SPA in-combination with other plans or projects. Compensatory measures were secured to offset impacts to the site and to ensure the overall coherence of the National Site Network. In light of the Hornsea Project Three Offshore Wind Farm determination and associated Habitats Regulations Assessment and in line with the request made with regard to the proposed Norfolk Boreas project, the Secretary of State wishes to revisit the Habitats Regulations Assessment for Norfolk Vanguard in relation to the Flamborough and Filey Coast SPA.</p>	The Applicant acknowledges that Hornsea Project Three has been required to provide compensation for its contribution to the in-combination kittiwake mortality apportioned to the Flamborough and Filey Coast SPA population. However, the predicted magnitude of impact for Hornsea Project Three was considerably larger than that for Norfolk Vanguard (over 3.5 times higher) and the Applicant has set out a clear rationale as to why AEoI can be ruled out for kittiwake in relation to the project. On this basis the Applicant's view is that the determination of Hornsea Project Three should not set a precedent for the requirement of compensation for Norfolk Vanguard nor indeed for any other projects, irrespective of the contribution they make to the in-combination total. This view is further supported by the fact that the in-combination total mortality is now much lower since the Hornsea Project Three mortality is no longer included.
19	<p>Flamborough and Filey Coast Special Protection Area ("SPA")</p> <p>In relation to in-combination impacts on the kittiwake, razorbill, gannet and guillemot features of the Flamborough and Filey Coast</p>	The Applicant has provided the additional requested material, in the updated In Principle Habitats Regulations Derogation Provision of Evidence Appendix 1 Flamborough and Filey Coast SPA In Principle Compensation (document reference 8.26, version 2). This is summarised below.

Paragraph number	Paragraph text:	Applicant's Response:
	<p>SPA, the Applicant, in collaboration with Natural England, is invited to provide updated in-combination assessments for collision and/or displacement effects, with and without Hornsea Project Four Offshore Wind Farm, using:</p> <ul style="list-style-type: none"> Natural England's advised assessment parameters; and The latest project parameters and baseline ornithology survey data for Hornsea Project Three Offshore Wind Farm. 	<p>Updated tables of the cumulative and in-combination collision estimates for gannet and kittiwake, and of population abundance (as used to estimate displacement risk) for gannet, guillemot and razorbill have been provided. Following the advice from Natural England to recent project submissions (e.g. Norfolk Boreas and East Anglia ONE North) these also now include the Dudgeon Extension and Sheringham Extension projects which have recently submitted preliminary environmental impact reports (PEIR). The recently provided figures for the final Hornsea Project Three wind farm have also been included (these figures have also been accepted by Natural England).</p> <p>Totals are presented with and without the PEIR wind farms (i.e. including and excluding the preliminary figures for Hornsea Project Four, Dudgeon Extension and Sheringham Extension). Natural England reviewed these tables (as presented for Norfolk Boreas) and agreed with the estimates used.</p>
20	<p>The Applicant is also requested to provide details of the following:</p> <ul style="list-style-type: none"> Any modifications to the Norfolk Vanguard project, that were not included at the time of the application or during the Examination, which could avoid or reduce adverse effects on the integrity of the site for kittiwake, razorbill and guillemot features; and Compensation strategies for kittiwake, razorbill and guillemot produced in consultation with Natural England, other interested parties and, if an action is required on its part, Defra. The strategies should include, but not be limited to, the following information <ul style="list-style-type: none"> a description of the compensatory strategies proposed, accompanied by an explanation of how they will effectively compensate for the negative effects of the Norfolk 	<p>The Applicant has provided a full response, with the additional requested material, in the updated In Principle Habitats Regulations Derogation Provision of Evidence Appendix 1 Flamborough and Filey Coast SPA In Principle Compensation (document reference 8.26, version 2).</p> <p>The Applicant has been undertaking work to further develop the project design, however this has not affected the worst case collision impacts as defined in the Additional Mitigation document (ExA; Mit; 11.D10.2. Additional Mitigation) submitted to the Secretary of State on 28 February 2020 in response to the request for further information provided to the Applicant on 6 December 2019. Therefore the project alone impacts remain as set out in these documents.</p> <p>However, it should be noted that during the Project's Examination considerable reductions in impacts had already been achieved through the removal of the smallest turbine options from the design envelope and an increase in draught height (the minimum distance between the lower rotor tip height and the sea surface) to 30m above Mean High Water Springs (MHWS) for turbines rated at 14.7MW or higher and 35m for turbines with a lower capacity. Combined, these changes reduced the Project's collision risks by up to 85% compared with the design submitted in the Environmental Statement. On top of this, offshore ornithology impact assessments contain several sources of precaution, which operate additively to give rise to significant over-precaution in the final estimates. In the modelling this includes use of either upper values (from parameters with ranges) or precautionary estimates for several modelling parameters (e.g. nocturnal activity, flight speed, avoidance rate). Within the in-combination assessments, as well as the above precaution being compounded across projects, there is a reluctance to accept built wind farm designs (and the associated impact levels) as appropriate to replace</p>

Paragraph number	Paragraph text:	Applicant's Response:
	<p>Vanguard project on the species, and how they will ensure that the overall coherence of the National Site Network is protected;</p> <ul style="list-style-type: none"> confirmation of the selected sites(s) for compensation strategies and details of how the site(s) will be acquired/ leased. For kittiwake, this would include viable options for offshore artificial nest site creation; an implementation timetable for when the compensation measures will be delivered and achieve their objectives in relation to the first operation of the wind farm; and <p>details of any proposed routine maintenance and species population monitoring during the project lifetime, together with the funding mechanisms for their delivery</p>	<p>the consented project impact levels, even when there is a robust case that no further development can occur. In many cases the wind farm impacts have reduced considerably (e.g. by 50% see e.g. [Norfolk Vanguard submission REP8-067]). Thus, not only are the current Project's impacts over-estimated, the same is the case for other wind farms in the in-combination assessment, and the latter typically do not even reflect the reduced impacts for operational wind farms.</p> <p>Overall, in light of the significant reductions in impact achieved through additional mitigation for the Project and the wider levels of over-precaution inherent in offshore ornithological impact assessment, the Applicant remains firmly of the view that the Project does not give rise to any AEoI at the FFC SPA.</p> <p>Notwithstanding this, since the close of the examination, the compensation strategy for kittiwake has been further developed by the Applicant in discussion with Natural England and the Port of Lowestoft. This will provide artificial breeding habitat suitable for kittiwake breeding to be located within the port area. Detailed designs have been developed for two alternative designs (a wall and a tower) to provide flexibility on location. The structures are modular so can be adapted to suit nesting requirements. Other potential nesting locations are also being investigated.</p> <p>An implementation timetable has been provided which would allow one cohort of fledged birds to reach breeding age before the wind farm becomes operational. However, modelling of the time taken for the compensation to achieve 'pay-back' of accrued mortality has demonstrated that in the event that the compensation is delayed, over-compensation will still be rapidly achieved. Additional information has been provided detailing the proposed monitoring (including design features to enhance access to the birds), management of the structure and the projected costs and funding mechanisms.</p> <p>Vattenfall Wind Power Ltd has also progressed plans to deliver this compensation in collaboration with ScottishPower Renewables, such that, if required, compensation for kittiwake mortality, can be provided by way of a joint structure (or structures) capable of compensating for both entities current wind farm plans (including Norfolk Vanguard, Norfolk Boreas, East Anglia ONE North and East Anglia TWO).</p> <p>Predicted displacement mortality of guillemot and razorbill from the FFC SPA is estimated to be very small (0.6 - 15 guillemots and 0.3 – 6 razorbills from FFC SPA), even when applying precautionary assumptions as advised by Natural England. Therefore, as above, the Applicant does not consider there to be any requirement to provide compensation as these will not give rise to AEoI of the FFC SPA. This</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>position is supported by the recent confirmation by Natural England that they do not consider there to be a risk of AEol for these species for all projects up to and including East Anglia ONE North and East Anglia TWO (i.e. including Norfolk Vanguard and Norfolk Boreas; see East Anglia One Examination ref: REP12-090⁶). Nevertheless, as requested, compensation proposals for guillemot and razorbill have been developed and presented in the submitted materials. These have been presented for each species separately, however there are close parallels for these species and therefore they have been combined in the summary below.</p> <p>Consideration has been given to the potential options available for compensating impacts on the FFC SPA populations of these species. These include fishery management measures to improve stock levels, reducing by-catch in fishing gear and eradicating rats at island breeding colonies. Following a review of the evidence for each of these options, with respect to fishery management, this is subject to the same limitations identified for kittiwake compensation, namely that it is not a measure which can be delivered by the Applicant but rather requires a strategic approach (as with kittiwake, the Applicant is willing to contribute to such a strategic approach if this is feasible). While by-catch of auks from the FFC SPA was a source of mortality in past years, measures taken to reduce this have been successful and therefore there is currently no scope for further changes to offset even the very small magnitude of effect predicted for the project. Therefore it is concluded that for both species rat eradication is the option most likely to deliver the required levels of compensation (although it would almost certainly actually deliver considerable over-compensation). Rat predation is not a concern at FFC SPA itself, therefore this measure would only be deliverable at another site.</p> <p>Following a rat eradication programme it would be expected that the guillemot and razorbill breeding populations at the target site would increase (due to expansion of the breeding birds into areas previously rendered unattractive or unsuitable because of the presence of rats) and improved productivity in areas accessible by rats (due to the reduction in egg and chick predation). Compensation for the FFC SPA populations would be through the resulting increase in the wider auk populations and therefore an increase in the availability of birds to recruit into the SPA population.</p> <p>The steps to achieve a successful rat eradication have been set out in an implementation timetable. Details are also provided of the proposed monitoring (of the seabirds and also to ensure success of the</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>eradication itself), any ongoing management (e.g. measures to reduce the risk of reinvasion) and the projected costs and funding mechanisms.</p> <p>There may be opportunities to deliver this compensation in collaboration with other wind farm developers and this has been allowed for in the plans.</p> <p>In summary, whilst the Applicant has provided additional compensation details as requested by the SoS, the Applicant remains firmly of the view that the Project does not give rise to AEoI on the FFC SPA.</p>

3.3 Haisborough, Hammond and Winterton Special Area of Conservation

Paragraph number	Paragraph text:	Applicant's Response:
21 & 22	<p>Haisborough, Hammond and Winterton Special Area of Conservation ("SAC")</p> <p>The Secretary of State's determination of Hornsea Project Three Offshore Wind Farm concluded that habitats which are subjected to cable protection will experience the effects of habitat loss, habitat modification and changes in epifauna communities. This is likely to impede the restoration of Annex I habitats for the duration that they are in place. With this considered, compensatory measures for the North Norfolk Sandbanks and Saturn Reef SAC and the Wash and North Norfolk Coast SAC were secured to offset impacts on Annex I habitat and to ensure the overall coherence of the National Site Network. In light of the Hornsea Project Three Offshore Wind Farm determination, the associated Habitats Regulations Assessment, and the letter of</p>	<p>The Applicant has given the decision made on Hornsea Project Three due consideration when preparing its submission for the 2 August 2021 deadline. The Applicant understands that the decision made by the SoS on that project represents the most relevant and recent example of where a project has been required to provide compensation. However as detailed below the effect that the Norfolk Vanguard project would have on the HHW SAC is far less than that caused by Hornsea Project Three on the North Norfolk Sandbanks and Saturn Reef SAC and the Wash and North Norfolk Coast SACs.</p> <p>In response to the information requested by the SoS the Applicant has considered the letter referred to by the SoS and firstly notes that Defra "<i>welcome the significant use of mitigation measures by the Applicant to avoid adverse effect where possible and in particular the restricted use of cable protection around reef areas in the site.</i>" Similarly, Natural England has also advised that Norfolk Boreas has taken all possible steps to mitigate any effects and that the considerable measures taken have "<i>significantly reduced the risk of an adverse effect on integrity</i>" (see the statement of common ground between Norfolk Boreas and Natural England [REP16-010] of the Norfolk Boreas examination library). In this respect, the Applicant has committed to and secured the same level of mitigation for the Norfolk Vanguard project in the outline Site Integrity Plan (SIP)/ Cable Specification, Installation and Monitoring Plan (CSIMP) as has been secured for Norfolk Boreas. In addition, in the same way as has been agreed for the Norfolk Boreas project, the Applicant is willing to secure that rock or gravel dumping will not be deployed in the HHW SAC (save in respect of cable and pipeline crossings) to give confidence that cable</p>

Paragraph number	Paragraph text:	Applicant's Response:
	<p>February 2021 issued by Defra in respect of the Norfolk Boreas application the Secretary of State wishes to revisit the Habitats Regulations Assessment for Norfolk Vanguard in relation to the Haisborough, Hammond and Winterton SAC.</p> <p>The Applicant is requested to consider the letter published by Defra (February 2021) and provide details of alternative compensation strategies for the reef and sandbank features of the Haisborough, Hammond and Winterton SAC which are produced in consultation with Natural England, other interested parties and, if an action is required on its part, Defra. The agreed compensation strategies should ensure that the overall coherence of the National Site Network is protected</p>	<p>protection required due to adverse ground conditions in the HHW SAC (if any) can be decommissioned, as committed to in the SIP/CSIMP. Therefore, the Applicant proposes that the following condition is secured as condition 3(1)(g) within the transmission DMLS at Schedule 11 and Schedule 12 of the dDCO:</p> <p>New condition 3(1)(g):</p> <p><i>"(g) in the Haisborough, Hammond and Winterton Special Area of Conservation, cable protection must not take the form of rock or gravel dumping where it is deployed to protect export cables apart from at cable crossing locations with existing cables and pipelines"</i></p> <p>As the Applicant has committed to the same mitigation measures as the Norfolk Boreas project this strongly supports the Applicant's position that there is no AEoI on the HHW SAC as a result of the project, and that compensation is not required.</p> <p>The Applicant has provided, within its Information to Support HRA report [APP-045] and supplementary submissions [ExA; Pos; 11.D10.1, ExA; Mit; 11.D10.2, and ExA; Mit; 11.D10.2.App2], a robust assessment of effects of cable protection on the HHW SAC and has concluded that these activities will not hinder the conservation objectives of the HHW SAC site. The maximum worst case area that could be impacted would be 0.0014% of the HHW SAC which, when read in the context of the Applicant's submissions on de minimis set out above, and in accordance with Natural England's advice on small scale impacts [REP4-062] is of such small scale as to not cause AEoI. This is in keeping with various case studies, for example:</p> <ol style="list-style-type: none"> 1. Walney Extension - habitat loss of intertidal mudflats and sand flats due to cable installation and rock armour. 0.41% of overall 600ha of feature was affected and the appropriate assessment concluded no AEoI. 2. Hinkley Point C - habitat loss of a small area of potential Sabellaria reef within the rock armour barge berthing and unloading area. This area equated to less than 0.05% of the SAC reef feature and was not considered significant. 3. Kentish Flats Extension - habitat loss of 0.003% of Special Protection Area (SPA). The Secretary of State (SoS) and NE agreed this loss to be negligible. <p>Furthermore, it should be noted that the SoS originally concluded for Norfolk Vanguard:</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p><i>"no AEol as the Applicant has demonstrated that the area of the site affected will be relatively small (in the case of reef, kept to a minimum through micro-siting), any affected features are able to recover, and all cable protection will be removed at the time of decommissioning. The Secretary of State notes that the decommissioning of cable protection will be secured in the DCO to ensure that any effects are lasting (for the duration of the project) but temporary (repairable effect)".</i></p> <p>And in considering all measures proposed by Norfolk Vanguard:</p> <p><i>"The Secretary of State considers that it provides sufficient detail on potential mitigation measures at this stage, whilst granting the Applicant a flexible approach until the extent and nature of mitigation becomes clear."</i></p> <p>Interested parties made submissions during the Norfolk Boreas examination which resulted in comparisons with the possible effects that Hornsea Project Three would have on the North Norfolk Sandbanks and Saturn Reefs SAC which is designated for the same features. Impacts associated with the Norfolk Vanguard project are on a much smaller scale than Hornsea Project Three; the area of habitat loss due to cable protection is approximately 1/25th of that of Hornsea Project Three; further detail is provided in section 1.12 of [REP17-003] of the Norfolk Boreas Examination Library. It should also be noted that significant steps have been taken by Norfolk Vanguard to reduce the impacts of cable protection over and above those committed to by Hornsea Project Three, such as the commitment to not use rock protection within the HHW SAC and the commitment to not place cable protection in areas that Natural England and the JNCC have identified as priority areas for <i>Sabellaria spinulosa</i> reef recovery (further detail is provided in [ExA; Mit; 11.D10.2.App2]). Therefore, although the Applicant acknowledges the decision that Hornsea Project Three should provide compensation, the Applicant considers that effects caused by the Norfolk Vanguard project are significantly smaller than those of Hornsea Project Three and therefore the same conclusions would not be appropriate.</p> <p>However, entirely without prejudice to the Applicant's position of no AEol, and in accordance with the SoS's original request as supplemented by the more recent requests to both the Applicant and Norfolk Boreas Limited, the Applicant has provided an updated version of the In Principle Habitats Regulations Derogation, Provision of Evidence Appendix 3 Haisborough, Hammond and Winterton SAC In Principle Compensation (Version 2). In updating the in-principle document, the Applicant has taken account of the position provided by Defra within their letter and has, in conjunction with Norfolk Boreas Limited, consulted extensively with Natural England, Defra, TWT, the MMO, OPRED and owners of seabed</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>infrastructure in an attempt to reach agreement with all parties on a suitable compensation solution. Through this consultation it is clear that there is no unanimous stakeholder agreement on the preferred approach. Therefore, the Applicant has considered four possible options, with two of these being recommended by the Applicant and thus developed further.</p> <p>Following further discussions with Defra they have confirmed that an extension to the HHW SAC, whilst not their preferred option, is not one that should be completely discounted and may provide a suitable strategic compensation option in the future. Therefore, this option has been taken forward as one of the preferred options presented in the in-principle document. The second preferred option which has been developed through discussions with stakeholders is removal of anthropogenic material from the seabed. This option consists of three strands which are designed to create new habitat by removing material and preventing further damage through return of further material.</p> <p>Accordingly, should compensation be required and notwithstanding the Applicant's position of no AEoI, two feasible options exist, either of which could be delivered if considered appropriate by the SoS.</p> <p>Since the SoS's previous consultation on Norfolk Vanguard, the Applicant has engaged with potential suppliers tendering to install the Norfolk Vanguard export cables. Through this engagement, bidders have assessed the geophysical and geotechnical data provided to them by Vattenfall and are confident that full burial will be achieved, and that no cable protection will be required (apart from at crossing points) within the SAC. Statements illustrating this position are provided in Appendix 2 of this document, However, it is not possible to conclusively and completely rule out the need for cable protection in the HHW SAC until export cables have been installed.</p> <p>It is therefore the Applicant's position that given that (i) it is not possible to establish whether cable protection will be required in advance of export cable installation; (ii) it is not possible to calculate the precise amount of compensation required (if any) before export cable installation; (iii) the low likelihood that cable protection will be required in the HHW SAC; and (iv) the very small scale of temporary (albeit lasting) impacts (even in a worst case) the Project gives rise to an exceptional case where it is appropriate and proportionate to require delivery of compensation <u>only</u> in the event that cable protection is installed in the HHW SAC, and therefore <u>only</u> after the installation of cable protection (if any).</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>The EC guidance makes allowance for this, and does not require compensation to be delivered prior to the effect occurring in every case. To require advance delivery of compensation without knowing whether, in practice, any AEoI would in fact arise, or the precise amount of the impact for which compensation should be provided, would set an undesirable precedent for future projects.</p> <p>This has been discussed with Natural England, who have suggested that the Applicant considers the option of installing the export cable and if there are locations where burial is not possible, using marker buoys and/ or guard vessels to protect it until compensation is delivered, at which point the cable protection could be installed. This is simply not possible on grounds of: health and safety and navigational risk (a surface lying cable would always have a snagging potential); export cable integrity (a surface lying cable would have significantly more chance of damage and failure either whilst exposed or partial damage which may result in failure at a later date); and the inability to transfer an unprotected asset to an Offshore Transmission Owner (OFTO) as required by the UK Government.</p> <p>Accordingly, the Applicant has proposed that the two recommended options for compensation are progressed to a proportionate stage prior to export cable installation, and that a single option is only identified and developed further once it is known that cable protection, and therefore compensation (including the amount), is required.</p> <p>The Applicant has proposed a condition which requires the compensation strategy to be submitted to the SoS (in consultation with Natural England) which would detail which of the options would be progressed to deliver the final compensation package. The draft condition requires the SoS to approve this strategy before energy could be generated by the wind farm. The suggested condition to secure compensation, which has been discussed with Natural England and the MMO (noting that further consultation might be required to reach full agreement on the wording of the timing elements of the condition), is provided within the HHW SAC in-principle compensation document at section 4.6.</p> <p>The Applicant has already started to progress each of the two preferred options. For example, as part of the development of one of the two preferred options (removal of Anthropogenic material), the Applicant has reached in principle agreement with owners of infrastructure to remove material from the seabed. Letters confirming this agreement are provided in Appendix 1 of this document. Furthermore, the Applicant has, as of 22 July 2021, reached agreement with BT to cut the final out of service cable within the HHW SAC rather than cross it, therefore further reducing the need for cable protection at the crossing point. This now leaves a single pipeline as the only crossing point required within the HHW SAC.</p>

Paragraph number	Paragraph text:	Applicant's Response:
		<p>It should also be remembered, that as part of the Applicant's commitment to extensive mitigation measures the Applicant has committed to decommission any cable protection placed within the HHW SAC apart from at cable crossing points [See ExA; Pos; 11.D10.1, document 8.20 (final version was submitted in response to the BEIS consultation deadline of the 28 February 2020) and ExA; Mit; 11.D10.2.App2] thus ensuring that the impacts of cable protection would be long term temporary. However, should the SoS determine that compensation is required, the Applicant, having then compensated for the permanent impact of cable protection, should not also be required to decommission it. This was accepted by Natural England in the Statement of Common Ground with Norfolk Boreas Limited [REP16-010 of the Norfolk Boreas Examination Library] and applies equally to Norfolk Vanguard.</p> <p>Whilst updating the HHW SAC in-principle compensation document for Norfolk Vanguard the Applicant has also demonstrated how compensation could be delivered for both Norfolk Vanguard and Norfolk Boreas, in a joint way should both projects be required to provide compensation.</p> <p>In summary, the Applicant has considered the Hornsea Project Three decision and the letter written by Defra and has provided details of alternative compensation as requested by the SoS. This has been provided in the form of version 2 of Appendix 3 to the In Principle Habitats Regulations Derogation, Provision of Evidence, being the Haisborough, Hammond and Winterton SAC In Principle Compensation (document reference 8.25). However, the Applicant remains firmly of the view that the Project does not give rise to AEoI on the HHW SAC and therefore compensation should not be required.</p>

Appendix 1 Letters from Infrastructure Owners

Provided below are letters from owners of telecommunication cables and oil and gas pipelines who own out of service infrastructure which is located within the HHW SAC. The letters provide assurance to the Applicant that they are in agreement with the principle of the Applicant removing their infrastructure if this is required.



Vattenfall Wind Power Ltd.
5th Floor 70
St Mary Axe
London
EC3A 8BE

Our ref:
Your ref:

22nd June 2021

Dear Mr. Laws

BT Subsea [and relevant consortia] Out of Service telecommunications Infrastructure

The purpose of this letter is to record recent discussions between Vattenfall Wind Power Ltd (**Vattenfall**) on behalf of Norfolk Boreas Limited and Norfolk Vanguard Limited (**the Projects**), and BT plc (**BT**) regarding the potential to remove Out of Service (**OoS**) telecoms infrastructure which is situated located within the Haisborough Hammond and Winterton Special Area of Conservation (**HHW SAC**; see Figure 1, attached).

In the event that cable protection (in the form of external mattress/rock placement etc) is deployed in the HHW SAC by the Projects, BT understands that the Projects may be required to deliver environmental compensation as a result of the potential for adverse effects on integrity (**AEol**) of the HHW SAC. BT and associated consortia are the owners of a number of OoS subsea cables which are located within the HHW SAC. BT and associated consortia already have OoS Agreements in with Vattenfall place for the following cables: UK-Germany 2, 3, 4 and 5 and UK-Denmark 1 & 2 and are currently seeking agreement for UK-Netherlands 14 (which is a BT, Vodafone, KPN consortium asset).

These agreements currently permit (amongst other obligations) the cutting, lifting and responsible disposal of these OoS cables at crossing points with the Projects export cables corridor. Vattenfall have proposed that these agreements are extended to permit the removal of any sections of cables within the HHW SAC that are agreed between the parties as appropriate and feasible to facilitate environmental compensation in the event of AEol.

BT are supportive of this proposal/initiative in principle, and look forward to collaborating further with Vattenfall to facilitate flexibility in our current and future agreements where appropriate.

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London EC1A 7AJ
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Richard Hill
Specialist Network Designer
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BT Friary House
Briton Street, Southampton
Hampshire SO14 3LX

Tel: +44 (0)203 251 6980
Mob: +44 (0)7711 191849
Email: richard.4.hill@bt.com

BT also confirm they have no objection if Vattenfall wish to submit this letter to the Secretary of State to demonstrate our positive discussions and BT's support in principle for this initiative

Yours sincerely,

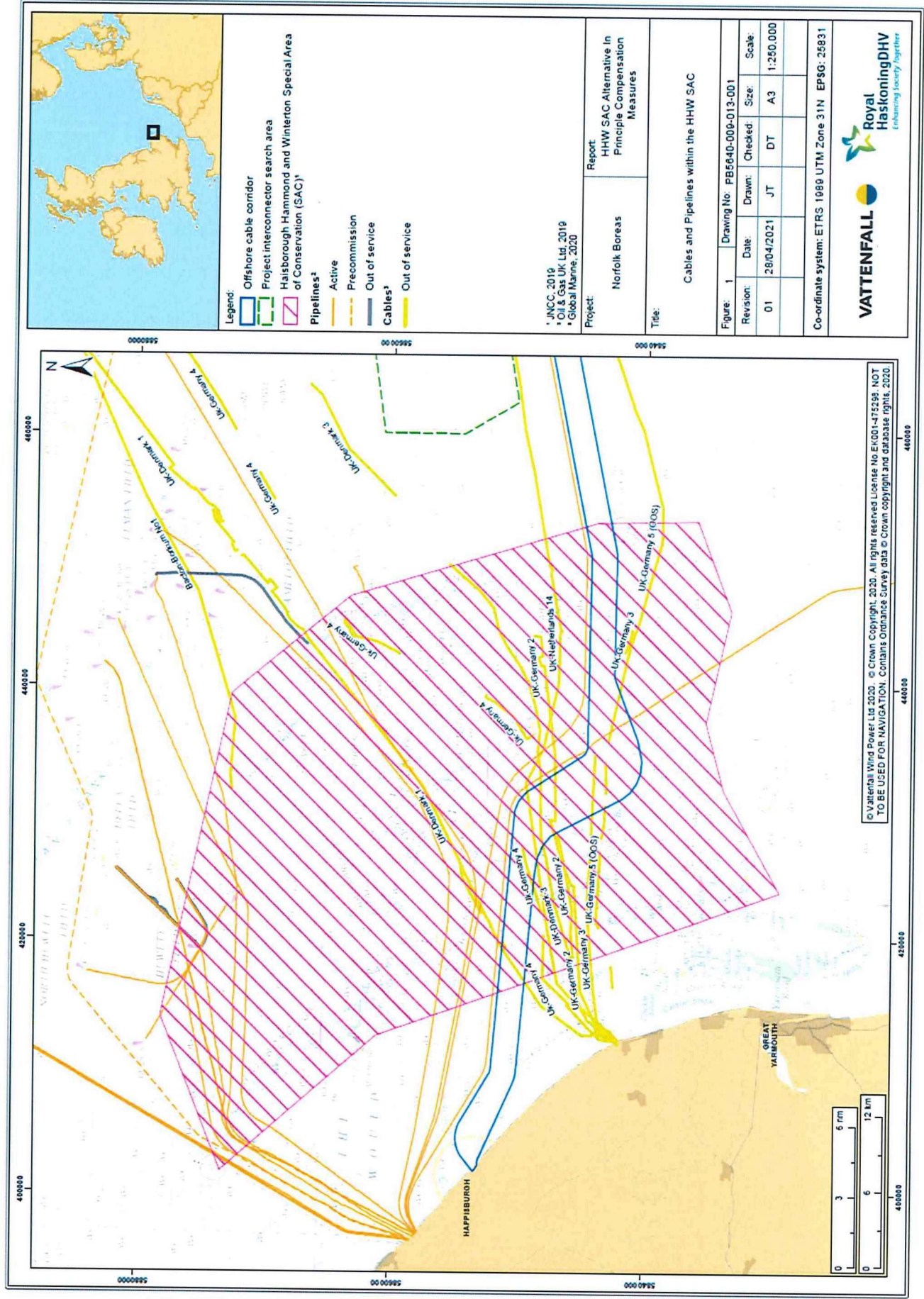


Richard Hill

Specialist Network Designer (Subsea)

For and on behalf of BT PLC

Figure 1



Jake Laws
Vattenfall Wind Power Ltd
5th Floor 70
St Mary Axe
London
EC3A 8BE

Dear Jake

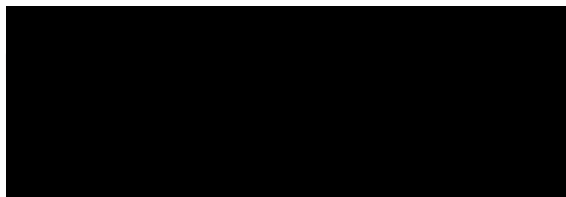
Helix Subsea Out of Service Oil and Gas Infrastructure

The purpose of this letter is to record our recent discussions between Vattenfall Wind Power Ltd (**Vattenfall**) on behalf of, Norfolk Boreas Limited and Norfolk Vanguard Limited (**the Projects**), and Energy Resource Technology UK Ltd (**Helix**) regarding the potential to remove disused oil and gas infrastructure in the decommissioned Camelot Field, which is situated partly within the Haisborough Hammond and Winterton Special Area of Conservation (**HHW SAC**).

In the event that cable protection is deployed in the HHW SAC by the Projects, Helix understands that the Projects may be required to deliver compensation as a result of the potential for adverse effects on integrity (**AEol**) of the HHW SAC. Helix are the owners of the disused oil and gas infrastructure in the decommissioned Camelot field and are supportive of Vattenfall's proposal to explore whether a section of the existing oil and gas pipeline can be removed as compensation for the use of cable protection by the Projects. We look forward to collaborating further with Vattenfall as to the precise nature and volume of disused infrastructure located in the decommissioned Helix field and whether it may be possible to remove this infrastructure in due course.

Helix have no objection if Vattenfall wish to submit this letter to the Secretary of State to demonstrate our positive discussions and Helix's support regarding potential removal of the oil and gas infrastructure in the decommissioned Helix field, should this option be necessary or pursued by the Projects.

Yours sincerely



Oliver Willis

VP Projects
On behalf of ERT UK Ltd

Appendix 2 Statement from parties bidding to install the Norfolk Boreas export cable

Provided below are statements from parties currently bidding to supply and install export cables for the Norfolk Boreas Project. Due to confidentiality of the bidding process it is not possible to identify the bidders or include anything from their statements which could be used by competing bidders to gain an advantage in the bidding process.

Sent by email from bidders

Vattenfall Wind Power limited
5th Floor
70 St Mary Axe
London
EC3A8BE

Date:
14/06/21 – 24/06/21

Contact: Anonymous
E-mail: Anonymous

Phone: n/a
Fax: n/a

Appendix 2 Quotes from possible cable installation suppliers

Bidders currently tendering to install the Norfolk Vanguard export cables were asked to respond to the statement provided below. The bidding process is ongoing and will not be concluded until early 2022. Due to the requirement to ensure that the bidding process remains confidential it has not been possible identify the tenderers who provided the statements below. Furthermore, any details of the methods bidders propose to use to bury the cables has been redacted as this could be used to gain advantage in the bidding process.

Statement:

To provide confidence to the environmental authorities interested in minimising impact in the Special Area of Conservation (SAC) on the main export route, can the bidder please confirm or comment on the below.

With regards to the bidders review of the Employer provided site information as part of the tendering process, and their preliminary assessments in relation to their proposed burial method and seabed lowering strategy, the bidder is wholly confident that the export cable can be buried to the Depth of Lowering requirements under the reference seabed level (RSBL) throughout the HHW SAC (apart from at cable crossing points) and therefore there is high confidence that placement of cable protection will not be required for the lifetime of the project.

Response from bidder:

“At this stage of the tendering and with the information provided we are pleased to confirm the statement.”

Response from bidder:

*“Along Special Areas of Conservation (KP15-KP55) for all three EC routes we proposed [REDACTED]
[REDACTED] With this methodology we have high confidence to achieve the burial requirements without having to resort to cable protection.”*

Response from bidder

[Our] preliminary assessment of the provided site data indicates that burial can be performed throughout the SAC area

Response from bidder:

Bidder hereby informs Employer that the export cables can be buried to the required Depth of [REDACTED] under the reference seabed level (RSBL) throughout the HHW SAC (apart from the cable crossings locations). The Bidder agrees that based on the provided data during ITT round One and TWO no remedial cable protection will be anticipated.

Bidder reserves the right to review this information according to any changes during technical clarification meetings.

All bidders have responded and have confirmed their consent for these statements to be included within this submission.