

# Norfolk Boreas Offshore Wind Farm Applicant's Comments on Deadline 8 Submissions

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*Photo: Ormonde Offshore Wind Farm*

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## Glossary of Acronyms

CRS	Cable Relay Station
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DML	Deemed Marine Licences
ES	Environmental Statement
ETG	Expert Topic Group
ExA	Examining Authority
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MCA	Maritime and Coastguard Agency
MMO	Marine Management Organisation
NPC	Necton Parish Council
OREI	Offshore Renewable Energy Installations
RIES	Report on the Implications for European Sites
RSPB	Royal Society for the Protection of Birds
NPC	Necton Parish Council
SoCG	Statement of Common Ground
TH	Trinity House
UK	United Kingdom

## 1 Applicant's Comments on Deadline 8 Submissions

1. This document contains the Applicant's comments on submissions by Interested Parties at Deadline 8 of the Norfolk Boreas Examination.

## 1.1 Necton Parish Council REP8-030

Summary of Submission	Applicant's Comments
<b>Representation Concerning HVAC versus HVDC Technology for the Vanguard and Boreas Windfarm Connections to the National Grid and Mitigation</b>	
<p>REP8-030 make a number of comments regarding the use and associated benefits and constraints of HVAC versus HVDC technology solutions, including that;</p> <ul style="list-style-type: none"> <li>• The HVAC versus HVDC decision was taken without any consultation with Necton residents or Necton Parish Council.</li> <li>• The increase in the size of the Necton infrastructure is greater than the reduction in size of infrastructure near the coast (i.e. the Cable Relay Station (CRS)). The short-term reduction in width of the cable corridor that will be completely hidden over time is being compared to an increase in acreage and height for the Necton substations that will not be mitigated during the life of the windfarms. This does not appear to be an equitable trade-off and NPC questions this aspect of the overall benefit of the decision.</li> <li>• Vattenfall and Breckland have agreed in their Statement of Common Ground that the Necton substation will not be mitigated.</li> <li>• Even with fully grown trees this will not mitigate the 19 metre buildings which will stretch up to 25 metres with the masts on top.</li> </ul> <p>REP8-030 concludes that there are some short-term benefits that guided the decision to use an HVDC connection to the National Grid but there are long term disadvantages to the decision that have not been considered and weighed against these short-term advantages.</p>	<ul style="list-style-type: none"> <li>• The Applicant refers to the response to the ExA's First Written Questions Q9.4.1 [REP2-021], which details that consultation was undertaken on both the HVAC and HDVC solutions. Prior to the commitment to a HVDC solution for Norfolk Boreas, made in February 2018, the Applicant fully assessed and consulted upon a complete Rochdale Envelope which considered the maximum extents of either a HVAC or HVDC project.</li> </ul> <p>At the Applicant's Phase 2 non-statutory exhibitions both a HVAC and HVDC visualisation were illustrated on the exhibition materials (document 5.1.12.9, APP-094) and the interactive 3D model and photomontages of both a HVAC and HVDC onshore project substation were consulted on during the Necton Substation Workshop Presentations (APP-132).</p> <ul style="list-style-type: none"> <li>• The Applicant refers to the response to ExA's Further Written Questions Q2.9.2.1 [REP2-021] which acknowledges that the commitment to HVDC technology results in higher infrastructure at the onshore project substation. This states that the worst case increase in height is 14.9m (calculated as the difference in the maximum height of external electrical equipment of 10.1m for HVAC and 25m for HVDC). This worst case increase relates to the height of lightning protection masts at 25m, however all other outside electrical equipment will not exceed 13m and convertor buildings will not exceed 19m. A worst-case onshore project substation compound area of 300m by 250m was considered for both technology solutions.</li> </ul> <p>Furthermore, as stated in the Applicant's response to the ExA's First Written Questions Q9.2.4 [REP2-021], there are number of benefits to the HVDC solution including the reduction in the width of the onshore cable route (100m to 45m) and the permanent easement (54m to 20m) across 60km significantly reducing the area of impact by 3.3km<sup>2</sup> and the removal of the requirement for a Cable Relay Station as permanent above ground</p>

Summary of Submission	Applicant's Comments
	<p>infrastructure, which would comprise an additional electrical compound of approx. 150m by 75m for each project. Therefore, the benefits from HVDC include permanent long-term benefits as well as significant benefits during construction.</p> <ul style="list-style-type: none"> <li>• The Statement of Common Ground with Breckland Council, first submitted at Deadline 2 [REP2-039] states that <i>'It is agreed by both parties that the visual effects have been assessed and that woodland mitigation planting would reduce the effects over time.'</i> Therefore, it is agreed by both parties that proposed mitigation would mitigate the localised effects over time and that this mitigation is considered appropriate and adequate.</li> <li>• To clarify the onshore project substation parameters, as secured in dDCO Requirement 16; the buildings (including the convertor buildings) must not exceed a height of <b>19m above existing ground level</b> and external electrical equipment (including the lightning protection masts) must not exceed <b>25m above existing ground level</b>. The lightning protection masts will not be 'on top' of the building and the building will be no higher than 19m above ground level.</li> </ul> <p>The Applicant refers to the response provided to the ExA's First Written Questions Q9.1.7 [REP2-021] on the height of vegetation, which indicates that all estimates for planting growth are conservative in respect of guidance produced by the Institute of Environmental Management Assessment (IEMA) where a broad average of 7 to 7.5m height after 15 years is presented but with reference also made to many faster growing species. Furthermore, the effectiveness of the mitigation planting relates to the position of the proposed woodland bands relative to the proposed development, as well as the elevation of the point where the viewer is relative to the elevation of the proposed development. In instances where viewpoints are slightly lower than the proposed development and / or where the proposed woodland bands lie slightly closer to the viewpoint, the planting does not necessarily need to reach 19m to screen the onshore project substation and could potentially achieve this at a lower height.</p>

## 1.2 Royal Society for the Protection of Birds REP8-033

Summary of Submission	Applicant's Comments
<p>The RSPB has outlined the documents they intend to provide comment on by Deadline 9</p> <p>At Deadline 10 (6<sup>th</sup> May 2020), the RSPB intends to provide their final thoughts on the Report on Implications for European Sites (RIES) and the derogation case that the Applicant has submitted. They will also respond to any final questions and responses submitted at Deadline 9 as appropriate.</p>	<p>The Applicant acknowledges the resource constraints which are affecting the RSPB's ability to provide comments on the updated submissions and welcomes the RSPB's stated commitment to provide comments on the updated project alone collision risk modelling, the updated cumulative and in-combination collision risk modelling and the written questions of relevance to the offshore ornithology assessment at Deadline 9. The Applicant also notes and welcomes that the RSPB expects to provide all necessary comments within the current examination timetable. The Applicant will continue to work proactively with the RSPB to facilitate this. The Applicant notified the RSPB on 23<sup>rd</sup> April 2020 of the Applicant's Deadline 8 submission detailing a slightly amended version of the cumulative and in-combination collision risk assessment [REP8-025] which corrected minor errors in the kittiwake and gannet cumulative tables identified by Natural England [REP7-047]. It should be noted that this has not materially affected the assessment and the changes made are very minor.</p>

## 1.3 Trinity House REP8-034

Summary of Submission	Applicant's Comments
<p><b>Response to the Third Round of Written Questions</b></p>	
<p>(Q.3.5.5.2) - Prospects for agreement on DML Conditions for notice to mariners period and cable laying plan:</p>	<p>It has not been possible to agree the wording of the condition with Trinity House, noting that the requirements of the condition are agreed and it is only the wording that remains disagreed within the SoCG (REP8-034).</p>



### Summary of Submission

Confirm whether agreement is likely to be reached with TH prior to Deadline 8 and provide any additional information to assist the ExA in making its recommendation to the Secretary of State in regard to matters below remaining to be agreed, as noted in the SoCG [REP6- 039], including:

TH request to add to DML Conditions [Schedule 9 Part 4 14 (1)(g), Schedule 10 Part 4 14 (1)(g), Schedule 11 Part 4 9(1)(g), Schedule 12 Part 4 9(1)(g), Schedule 13 Part 4 7(1)(f)]

*“a detailed a detailed cable laying plan of the Order limits, incorporating a burial risk assessment encompassing the identification of any cable protection that exceeds 5% of navigable depth referenced to chart datum and, in the event that any area of cable protection exceeding 5% of navigable depth is identified, details of any steps (to be determined following consultation with the MCA and Trinity House) to be taken to ensure existing and future safe navigation is not compromised or such similar assessment to ascertain suitable burial depths and cable laying techniques, including cable protection”*

TH Written Representation to the ExA for Deadline 8

*TH notes the Applicant’s position and understands that the Applicant considers that the requirement is alternatively covered by other conditions and consultation with TH on the cable design as per Schedules 9-10 Part 4 14(a) and Schedule 11-12, Part 4 9(1a). Accordingly, TH would like to confirm to the ExA please that it does not agree with the Applicant in this regard and remains of the view that it is important for the requirement to be specifically referenced in the DMLs in the draft DCO. In particular TH would highlight its concerns regarding its involvement being secured indirectly through other conditions and would prefer direct securing through the suggested condition as worded in agreement between the Maritime and Coastguard Agency and Marine Management Organisation (MMO) and TH. The Applicant’s suggestion to add TH into Condition 15(8) (Schedule 9-10) and Condition 10(8) (Schedule 11-12) is not accepted as being reasonable as this applies to all activities. Some of these are outside of TH’s statutory remit and which it does not need to be aware of. Consequently, consulting with TH in this manner, on all matters prior to the commencement of any part of the scheme, will inevitably impact on TH’s resources and could result in delays if it were unable to respond to the MMO, or indeed, if it were not appropriate for TH to respond. TH proposed its drafting change purely on the grounds of improving marine navigation safety. In particular, a reduction in clearance depth of over 5% may cause a significant hazard to navigation.*

### Applicant’s Comments

The Applicant will be fully compliant with the requirement to seek consultation on any cable protection that exceed the 5% safety margin as defined within Marine Guidance Note (MGN) 543. This disagreement is therefore set out as follows noting that the Applicant is keen to minimise additional text within the dDCO/DML to address matters already covered within existing conditions and regulatory requirements (as mentioned MGN 543).

The Applicant notes the Trinity House’s position on this matter however requests that wording within Schedule 9 Part 4, 14 (1)(g) Schedule 10 Part 4 14 (1)(g), Schedule 11 Part 4 9(1)(g) , Schedule 12 Part 4 9(1)(g), Schedule 13 Part 4 7(1)(f) is maintained as per that within the Norfolk Vanguard dDCO for the following reasons:

- The consistency with Norfolk Vanguard is important, especially from a contractor compliance perspective, as having the additional text regarding 5% of navigable depth in one project condition and not the other could cause confusion as it might imply, on the face of it, that only one project needs to comply with this condition; whereas both projects will comply fully with the requirement as per MGN 543. Therefore the Applicant considers it is best practice for both dDCOs to align in this respect.
- Furthermore, the Applicant reiterates its points raised previously at Deadline 7 [ REP7-020]. TH has the ability to review and input into the cable details at various points – all of which are prior to construction, in accordance with Condition 14(1)(a) (Schedule 9-10), and Condition 9(1)(a) (Schedule 11-12). TH has therefore different avenues to flag (non)compliance with this requirement and can, ultimately, withhold approval of the design plan until TH is satisfied that this element is complied with (secured through Schedule 9-10, Condition 14(1)(a) and Schedule 11-12, Condition 9 (1)(a) which cover agreement with the MMO in consultation with Trinity House and MCA on the length and arrangements of all cables as part of the design plan).

Summary of Submission	Applicant's Comments
<p>Without suitable and timely risk mitigation, for which its revised drafting clearly provides, TH are concerned that marine safety will be compromised. TH therefore respectively submits that it is important for the requirement to be specifically referenced in the DMLs in the draft DCO as outlined above.</p>	<p>The Applicant also considered that adding TH to the MGN543 condition provided a further opportunity of protection for TH (again, prior to any construction) and the Applicant made the amendment on the updated DCO submitted at D7 (Condition 15(8) (Schedule 9-10) and Condition 10(8) (Schedule 11-12)) as follows:</p> <p><i>(8) No part of the authorised scheme may commence until the MMO, in consultation with the MCA and Trinity House, has confirmed in writing that the undertaker has taken into account and, so far as is applicable to that stage of the project, adequately addressed MCA recommendations as appropriate to the authorised scheme contained within MGN543 "Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response Issues" and its annexes.</i></p> <p>Following the D8 response from Trinity House and further discussions with Trinity House, the Applicant has agreed to remove the wording 'and Trinity House' from (Condition 15(8) (Schedule 9-10) and Condition 10(8) (Schedule 11-12)) given the concerns over additional onus/remit it put upon them. This update will be made on the updated DCO to be submitted at Deadline 10.</p> <p>The Applicant does not consider that the drafting proposed by TH would in any way increase navigational safety. This is because the same requirement - to identify any cable protection exceeding 5% of navigable depth and outline details of future navigation - is already secured by Condition 15(8) (Schedule 9-10), and Condition 10(8) (Schedule 11-12) through compliance with MGN543. To impose different wording between Norfolk Vanguard and Norfolk Boreas in this respect could, to the contrary, result in greater scope for error and inconsistency when it comes to discharge of, and compliance with, conditions.</p> <p>The Applicant also notes that the MCA and the Applicant are in agreement on this condition as per their SoCG (REP8-020).</p>

## 1.4 Colin King REP8-035

Summary of Submission	Applicant's Comments
<b>Comments on the Applicant's comments on Deadline 6 submission</b>	
<p>REP8-035 provides further comments regarding the noise sensitivity of Ivy Todd Farm and requesting a change to the noise limits radius based on the sensitivity of agricultural land.</p>	<p>The operational noise limits, as detailed and secured in dDCO Requirement 27, were provided during stakeholder engagement with Breckland Council, as detailed in ES Chapter 25 paragraph 109:</p> <p><i>“During consultation (at ETG meetings for Norfolk Vanguard Limited in 2017) with the Environmental Health Officer at Breckland Council, it was identified that there would be a requirement for noise emissions from the onshore project substation installation to comply with the following conditions to ensure that operational noise does not exceed the permitted noise levels of the existing Dudgeon Offshore Wind Farm substation:</i></p> <ul style="list-style-type: none"> <li>• <i>The noise rating level (defined as set out in BS 4142) from the operation of the substation shall not exceed 35 dB<sub>LAeq, (5 minutes)</sub> at any time at a free field location immediately adjacent to any noise sensitive location; and</i></li> <li>• <i>Noise from the operation of the substation shall not exceed a limit value of 32 dB<sub>LLeq (15 minutes)</sub> in the 100 Hz third octave band, at any time at a free field location immediately adjacent to any noise sensitive location</i></li> </ul> <p><i>These limits as agreed would apply to Norfolk Boreas and any cumulative onshore electrical infrastructure”.</i></p> <p>Furthermore, in consultation with Breckland Council, it was agreed that potential impacts should be considered at the same representative closest noise sensitive receptors as the Dudgeon scheme, supplemented by additional project specific receptors based on the scheme footprint within the study area.</p> <p>As such, the ‘noise limit radius’, as referred to by REP8-035, reflects the locations of the closest human receptors to the onshore project substation (as identified in ES Table 25.27) which were agreed with Breckland Council. Residential receptors are considered to be of medium sensitivity and have a limited tolerance of effect. Whereas, as stated in the Applicant's Comments on Deadline 6 submission [REP7-016] response to REP6-059, agricultural land is considered to have negligible sensitivity where noise is not expected to be detrimental.</p>

Summary of Submission	Applicant's Comments
	<p>Therefore, no change to the 'noise limit radius' is considered necessary to accommodate land which is used for agricultural purposes.</p> <p>The operational noise limits, as secured by dDCO Requirement 27, are cumulative with the existing onshore infrastructure to ensure the soundscape at the identified and agreed receptors does not change beyond the existing Dudgeon condition noise levels from the operation of the Norfolk Boreas and / or Norfolk Vanguard onshore project substation.</p>
<p>REP8-035 acknowledges the updated cross sections however comments they show different visibility to the Applicant's visualisations at Viewpoints 3 and 7.</p>	<p>The screening seen in the visualisations of Viewpoint 3 and 7 relates partly to landform and partly to existing tree cover. In respect of Viewpoint 3, the mature trees around Lodge Farm (approximately 18m tall) reduce the extent to which the onshore project substation would be visible. An updated cross section of Viewpoint 3 showing this existing woodland is presented in Appendix 1. Similarly, from Viewpoint 7, there is tree cover along an intermediate field boundary which, owing to its closer proximity to the viewpoint, is of a comparable scale to the scale of the onshore project substation. While the Rochdale envelope is set at 25m to include the lightning masts, the building is set at a maximum height of 19m which may account for less being visible in the visualisations than might be anticipated.</p>
<p>REP8-035 provides comments regarding compulsory acquisition and historic easement rights over the substation land at Necton.</p>	<p>The Applicant refers to the response provided to the ExA's Further Written Questions Q2.3.0.26 [REP5-145] which addressed the matter of the historic rights believed to be held by Mr King, which stated:</p> <p><i>"The Applicant has explored the position further with its legal advisors. The position remains that the rights referred to as described in a 1972 Conveyance are not available to be viewed anywhere and therefore cannot be ascertained. The Applicant has made previous contact with Mr Colin King regarding these rights, however Mr King also does not hold a copy of the 1972 Conveyance and does not know to what it refers. Therefore the rights referred to in title NK440779 and benefitting Colin King, Jacqueline Claxton and Paul King have been included in those plots of land falling within this title as a precaution until any clarity on the rights is received. If Mr King is able to provide evidence of what type of rights exist over the affected land, the Applicant will seek to acquire these rights by agreement. If an agreement is unable to be reached, the Applicant will seek to utilise any compulsory powers awarded. The Applicant would like to also correct the statement regarding a 'value per square metre'. The agreed value that is being offered through the private agreements, is in relation to the easements Vattenfall</i></p>

Summary of Submission	Applicant's Comments
	<p><i>wish to acquire over land for the cable requirements, rather than a value to acquire existing easements which need to be stopped up."</i></p>
<p>REP8-035 suggests that the project is going to encroach on Ivy Todd's and West End's residential buffer zone.</p>	<p>During the site selection process, a buffer was applied to all residential properties within the onshore project substation search area to identify an area with increased separation distances (see ES Appendix 4.10 [APP-546].</p> <p>The residential buffer zone is shown on ES Figure 4.10 [APP-257] and includes properties at Ivy Todd and West End. ES Figure 4.10 [APP-257] shows that the onshore project substation site is outside these and all the residential buffer zones.</p>

## Appendix 1 - Updated Cross-Section of Viewpoint 3

# Cross Section 3

Height AOD (m)

