

Norfolk Vanguard Offshore Wind Farm

Applicant's Comments on Responses to the ExA's Further Written Questions

Applicant: Norfolk Vanguard Limited
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Photo: Kentish Flats Offshore Wind Farm



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Glossary

AEoI	Adverse Effect on Integrity
BC	Breckland Council
BDC	Broadland District Council
BDMPS	Biologically Defined Minimum Population Scales
CfD	Contract for Difference
CoCP	Code of Construction Practice
CRM	Collision Risk Model
cSAC	candidate Special Area of Conservation
dB	decibel
DCO	Development Consent Order
dDCO	draft Development Consent Order
DML	Deemed Marine License
EA	Environment Agency
EIA	Environmental Impact Assessment
EMI	Electro-magnetic Interference
EPS	European Protected Species
ES	Environmental Statement
ExA	Examining Authority
FFC	Flamborough and Filey Coast
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
HHW	Haisborough Hammond and Winterton
HoTs	Heads of Terms
HRA	Habitats Regulation Assessment
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IPMP	In Principle Monitoring Plan
IPSIP	In Principle Site Integrity Plan
JNCC	Joint Nature Conservation Committee
LHA	Local Highway Authority
LPA	Local Planning Authority
LSE	Likely Significant Effect
LVIA	Landscape and Visual Impact Assessment
MMMP	Marine Mammal Mitigation Protocol

MMO	Marine Management Organisation
MoD	Ministry of Defence
MSS	Marine Science Scotland
NCC	Norfolk County Council
NE	Natural England
NFFO	National Federation of Fishermen's Organisation
NNDC	North Norfolk District Council
NNDR	Norwich Northern Distributor Road
NSAG	Necton Substation Action Group
OCoCP	Outline Code of Construction Practice
OLEMS	Outline Landscape and Environmental Management Strategy
OOMP	Offshore Operation and Maintenance Plan
OTMP	Outline Traffic Management Plan
OWF	Offshore Windfarm
PBR	Potential Biological Removal
PVA	Population Viability Analysis
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCI	Site of Community Importance
SMP	Soil Management Plan
SNCB	Statutory Nature Conservation Body
SIP	Site Integrity Plan
SoCG	Statement of Common Ground
SPA	Special Protection Area
TWT	The Wildlife Trusts
WCS	Worst Case Scenario
WDC	Whale and Dolphin Conservation
WSI	Written Scheme of Investigation

1 APPLICANT'S COMMENTS ON RESPONSES TO THE FIRST WRITTEN QUESTIONS

1. Following the issue of Further (Second) Written Questions by the Examining Authority (ExA) on 27 February 2019, the Applicant has reviewed the responses submitted by Interested Parties at Deadline 4. Details of the Applicant's responses are set out within this document.

1.1 General

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
1.7	Natural England (NE)	Are you satisfied that long-term ecological monitoring during the operational phase of the project is adequately secured in the dDCO?	There is an In Principle Monitoring Plan that includes monitoring post construction. This is secured in the DCO/DML and in line with all other OWF NSIPs	The Applicant agrees and has no further comments.
1.7	Royal Society for the Protection of Birds (RSPB)	Are you satisfied that long-term ecological monitoring during the operational phase of the project is adequately secured in the dDCO?	No, we are concerned that provision for project level monitoring has not been included. Whilst we welcome the inclusion of strategic monitoring, project level monitoring is also needed to understand impact pathways and test hypotheses that have been used in planning decisions, such as avoidance and collision rates. The main topics for post-construction monitoring and research are collision risk and displacement/barrier effects. Studies benefit from before/after comparison, whilst data collection during construction is also helpful to identify whether construction per se is the cause of observed changes and whether effects persist during the operational phase. Our full position regarding the need to update the In-principle Monitoring Plan and to secure these changes in the dDCO is set out in our Written Representations [doc. REP1-112].	The In Principle Monitoring Plan (IPMP) (document 8.12) provides the framework to agree monitoring with the Marine Management Organisation (MMO) and as stated by Natural England, this is in keeping with other offshore wind farms. The IPMP does not rule out the potential of project specific monitoring, although acknowledges that strategic monitoring may be more appropriate. In addition, the Applicant has also committed to an Ornithological Monitoring Plan, required under the development consent order (DCO) Schedules 9 and 10, Part 4 Condition 14(1)(l). As stated in the IPMP, Vattenfall (as the parent company of Norfolk Vanguard Limited) has a proven commitment to ornithological monitoring of offshore wind farms and improving understanding of potential impacts (e.g. through the European Offshore Wind Deployment Centre research projects) and will maintain this in relation to Norfolk Vanguard.
1.7	Marine Management Organisation (MMO)	Are you satisfied that long-term ecological monitoring during the operational phase of the project is adequately secured in the dDCO?	The MMO is satisfied that the conditions within the dDCO adequately secure the long-term ecological monitoring subject to the review and agreement of the updated In Principle Monitoring Plan (IPMP).	The Applicant agrees and has no further comments.
1.7	The Wildlife Trusts (TWT)	Are you satisfied that long-term ecological monitoring during the operational phase of the project is adequately secured in the dDCO?	TWT recommend that a period of post-construction monitoring is undertaken to understand the impact of offshore wind farm development on harbour porpoise within the Southern North Sea SCI. As stated previously, this would be best delivered through a programme of strategic monitoring. Currently monitoring for the Southern North Sea SCI is only secured through the In-Principle monitoring plan. Although we welcome that the applicant supports a strategic approach to monitoring, we highlight that a mechanism to deliver this is not in place. Without a strategic approach in place, the standard for offshore wind farms is to monitor noise levels from the first 4 piling operations. This is not adequate to understand the impact of underwater noise from construction activities on the Southern North Sea SCI. Minimum monitoring requirements should include noise monitoring pre construction, during construction and post-construction and the distribution of harbour porpoise in relation to this.	The IPMP provides the framework to agree monitoring with the MMO, as agreed in the response to Q1.7 by Natural England and the MMO. It should be noted, that Section 4.5 of the IPMP describes the in principle marine mammal monitoring and this is in addition to the monitoring of noise levels from the first four piling operations (Section 4.6 of the IPMP).
1.7	Whale and Dolphin Conservation (WDC)	Are you satisfied that long-term ecological monitoring during the operational phase of the project is adequately secured in the dDCO?	Whilst there is a commitment in the dDCO to monitoring during the operational phase, there is little detail on the methodology that will be used to undertake this. Without additional detailed information, it impossible to conclude if this will be adequate.	The IPMP provides the framework to agree monitoring with the MMO, as agreed by Natural England and the MMO.

1.2 Principle and Nature of the Development

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
2.6	Applicant Responded to by Necton Substation Action Group (NSAG)	Paragraph 4.5.3 of EN-1 seeks to ensure that energy infrastructure developments are sustainable and as attractive, durable and adaptable as they can be, taking into account both functionality (including fitness for purpose and sustainability) and aesthetics.: Please explain, in relation to fitness for purpose, sustainability, durability and adaptability, how Norfolk Vanguard has demonstrated good design.	<p>Please can you say why attractiveness and aesthetics are not included in this question?</p> <p>If they were then the developer's own PEIR Document tells you that this structure (substation) does not fit into its surroundings, and is impossible to mitigate satisfactorily – i.e. make it look aesthetically pleasing, or attractive. As to sustainability – this word's definition is: the ability to be sustained, supported, upheld, or confirmed. Environmental Science, the quality of not being harmful to the environment or depleting natural resources, and thereby supporting long-term ecological balance: The committee is developing sustainability standards for products that use energy. This project, with Boreas will use approximately 300 acres of land, some temporarily, but most permanently. This project is being built on an island, where land for housing and farming is in short supply and cannot be replaced, and is intrinsically a natural resource that is not sustainable.</p>	<p>The Applicant responded to the aesthetic aspects of good design referred to in Paragraph 4.5.3 of EN-1 in response to Q2.1 and Q14.1 of the Examiner's first written questions submitted at Deadline 1 (ExA; WQ; 10.D1.3).</p> <p>The concept of aesthetics (as part of good design) is set out in paragraph 4.5.3 of NPS EN-1 and emphasises the importance of siting. The responses to Q2.1 and Q14.1 provide details of the site selection process set out in Environmental Statement (ES) Chapter 4 Site selection and Alternatives.</p> <p>This details how sites were selected and layouts developed to optimise the assets of the natural landform and screening of existing vegetation. For example, the proposed location of the onshore project substation is on a relatively level plateau with screening afforded by existing woodland to the north and east.</p> <p>The permanent above ground infrastructure will result in the loss of 10.5ha (25 acres of agricultural land) for Norfolk Vanguard alone. In addition, some further areas of agricultural land will be required to introduce woodland planting and other natural habitats – approximately 8ha (19.5 acres). There will be no other permanent change in land use.</p>

1.3 Ecology Offshore - Ornithology

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
3.19	RSPB	Please comment on whether or not the Applicant's response to the First Examination Questions (ExQ1) [PD-008] 3.3, 3.4, 3.5, 3.7 and 3.8 [REP1-007] together with the information submitted by the Applicant at D1, specifically Appendix 3.1 Red-throated diver displacement, Appendix 3.2 Collision Risk Modelling: update and clarification, Appendix 3.3 Operational Auk and Gannet displacement: update and clarification [REP1-008 collectively], has now overcome the concerns you had previously raised in regard to these particular matters and which are reflected in the relevant topic areas that are defined as 'not agreed' in the Statement of Common Ground submitted at Deadline 1 (D1) [RSPB REP1-058].	<p><u>Use of migration-free breeding season for gannet, kittiwake and lesser black-backed gull</u></p> <p>These concerns were not addressed by the Applicant in the representations noted above, and hence this area is still 'not agreed'.</p> <p><u>Construction and operational displacement and mortality rates – red throated diver</u></p> <p>The Applicant presented revised displacement assessment outputs in Appendix 3.1 Red-throated diver displacement [REP1-008]. These incorporated a 4km buffer and were based on the displacement and mortality rates recommended by Natural England and supported by us. However, the Applicant also presented an assessment based on their preferred values of 90% displacement and 1% mortality. We therefore agree with the assessment based on the Natural England recommended displacement and mortality rates, but disagree with the assessment based on the Applicant's preferred rates.</p> <p>We also do not agree that cumulative impacts on the red-throated diver biogeographic/BDMPS populations should be considered to be of minor significance. Given the levels of mortality predicted using the recommended parameters, these impacts should be considered to be of moderate significance.</p> <p><u>Construction and operational displacement – auks</u></p> <p>The Applicant presented revised displacement assessment outputs in Appendix 3.3 Operational Auk and Gannet displacement: update and clarification [REP1-008]. We supported the recommendations of Natural England which state that</p>	<p>Additional assessment for these species will be provided by the Applicant at Deadline 6, with impacts apportioned to months on the basis of both the migration-free and full breeding seasons.</p> <p>The assessment was presented using both the Natural England advised precautionary rates for displacement and mortality, and rates identified as appropriate by the Applicant, following a review of evidence from wind farm studies (Norfolk Vanguard Offshore Wind Farm Offshore Ornithology: Red-throated diver displacement (Appendix 3.1, document reference ExA; WQApp3.1; 10.D1.3)).</p> <p>The Applicant acknowledges that the Royal Society for the Protection of Birds (RSPB) and Natural England consider that 10% of displaced red-throated diver will suffer mortality as a consequence of being displaced, and that on this basis the impact would have a moderate magnitude and so be classed as significant in Environmental Impact Assessment (EIA) terms. However, this rate of mortality is not supported by evidence and is considered highly precautionary. The Applicant's evidence review concluded that, although there is uncertainty in this regard, the available evidence suggests there would be little or no impact on survival.</p> <p>The Applicant does not consider any further assessment is required for this potential impact.</p> <p>The assessment was presented using both the Natural England advised precautionary rates for displacement and mortality, and rates identified as appropriate by the Applicant, following a review of evidence from wind farm studies (Norfolk Vanguard Offshore Wind Farm Offshore Ornithology:</p>

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			<p>the displacement assessment for auks should incorporate a 2km buffer and be based on worst case scenario (WCS) displacement of 70% and mortality of 10%. Whilst this was acknowledged in the update, outputs based on these figures were not discussed. However, the tables provided indicate that at these levels, cumulative mortality is predicted to result in a rise in background mortality of over 1% for all auk species, with the rise for guillemot and razorbill being over 3%. Given the WCS levels of mortality predicted using the recommended parameters, we do not agree that impacts on the biogeographic/BDMPS populations can be considered to be of minor significance; these should be considered to be of moderate significance.</p>	<p>Operational Auk Displacement: update and clarification (Appendix 3.3, document reference ExA; WQApp3.3; 10.D1.3)).</p> <p>The Applicant acknowledges that the RSPB and Natural England consider that 10% of displaced auks will suffer mortality as a consequence of being displaced, and that on this basis the impact would have a moderate magnitude and be classed as significant in EIA terms. However, this rate of mortality is not supported by evidence and is considered highly precautionary.</p> <p>An individual based model (Searle et al. 2017) developed for estimating population effects of displacement during the breeding season found that displacement from multiple offshore wind farms resulted in additional mortality of up to 0.3%. Given that breeding birds are much more constrained during the breeding season than in winter, due to the requirement to provide regular meals for their chicks, it is highly unlikely that displacement during a period of the year when the birds largely remain at sea and fly much less would have an effect up to 2 orders of magnitude greater (0.3% compared with 10%). Indeed, in this context the Applicant considers the 1% mortality rate used in the assessment to be precautionary.</p> <p>On this basis the Applicant does not consider any further assessment is required for this potential impact.</p>
			<p><u>Collision risk modelling methodologies</u></p> <p>Following the Applicant's response to the First Examination Questions (ExQ1) [PD-008] and Appendix 3.2 Collision Risk Modelling: update and clarification, we still have significant concerns about the methods used in the collision risk modelling and the subsequent conclusions regarding impact significance. In particular,</p> <ul style="list-style-type: none"> • We do not agree with the justification provided for using median values for bird density in the collision risk model and continue to recommend that mean densities are used, as is standard practice. • Insufficient detail is presented to enable comparison with the MSS stochastic model. We therefore continue to recommend the use of the MSS model and disagree with the use of the Applicant's own stochastic model. • We welcome the provision of updated collision mortality figures using the Natural England recommended rates for kittiwake and large gulls. However, as survey timings are not known, the Natural England recommended rates should be used for gannet as well, instead of the Furness et al. (2018) nocturnal activity rates. • Our disagreement with the use of a 98.9% avoidance rate for gannet in the breeding season remains. 	<p>Further assessment of collision risks which addresses these points will be submitted by the Applicant at Deadline 6.</p> <p>This will include deterministic modelling using Band (2012), as agreed in discussion with Natural England, with results calculated using Natural England's preferred precautionary parameter values, alongside the evidence based values considered by the Applicant as more appropriate.</p> <p>Seabird densities will be the mean and 95% confidence intervals. The Applicant agrees that for deterministic CRM the mean density is appropriate (and is indeed identical to the median when this is calculated from 2 values as is typically the case).</p> <p>The Marine Science Scotland (MSS) model is not considered to be sufficiently reliable at present and, in agreement with Natural England, no further attempts to use this model will be made by the Applicant. All subsequent CRM will be calculated using the deterministic Band model.</p> <p>Collision estimates will be provided using the currently advised rates of nocturnal activity for gannet, kittiwake, lesser black-backed gull, herring gull and great black-backed gull, as well as lower rates as advised by Natural England, and evidence based rates for gannet.</p> <p>The Applicant acknowledges the RSPB's reservations about the gannet avoidance rate used in the breeding season, however these are not supported by Natural England. Furthermore, fewer than 25% of the predicted collisions at Norfolk Vanguard are predicted between March and September (the full breeding season) and consequently this aspect has a relatively small effect on the magnitude of impact.</p>
			<p><u>Concerns regarding the approach to the determination of adverse effects on integrity</u></p> <p>We disagreed with the Applicant's approach to apportioning of impacts to kittiwakes of the Flamborough and Filey Coast SPA, and recommended that the Applicant should follow the recommendations of SNH (2018), amended, as per the guidance, with additional account of recent tracking data from Flamborough</p>	<p>The Applicant is continuing to develop the apportioning rates for kittiwake and lesser black-backed gull and will provide an updated assessment at Deadline 6, which will take into account a range of available evidence and guidance.</p> <p>If further population modelling is required it will be provided at Deadline 6.</p>

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			<p>and Filey Coast SPA. Whilst some progress is being made regarding the use of the RSPB tracking data, this area is yet to be resolved.</p> <p>We also disagreed with the Applicant's approach to apportioning of impacts to lesser black-backed gulls of the Alde-Ore Estuary SPA and recommended an alternative approach based on the SNH (2018) guidance and informed by updated colony numbers and studies of diet preferences (see our Response to the First Written Questions [REP1-110]. The Applicant responded to this in their Comments on Responses to the First Written Questions [REP2-004], however, our view remains as set out in REP1-110, as we do not agree that their response sufficiently addresses these issues.</p> <p>No updates regarding population modelling have been provided at this stage, hence our disagreement with the use of potential biological removal (PBR) to inform conclusions regarding adverse effects on integrity remains.</p>	
			<p><u>Significance of collision risk impacts</u></p> <p>Given our outstanding concerns regarding the collision risk methodologies, we are still unable to agree that adverse effects on the integrity of the following sites and features can be ruled out:</p> <ul style="list-style-type: none"> • The kittiwake population of the Flamborough and Filey Coast SPA alone and in-combination with other plans and projects; • The gannet population of the Flamborough and Filey Coast SPA alone and in-combination with other plans and projects; • The lesser black-backed gull population of the Alde-Ore Estuary SPA alone and in-combination with other projects. <p>We are also unable to agree that cumulative collision risk impacts for key populations are of minor significance only. The populations of concern are the North Sea populations of kittiwake and great black-backed gull.</p>	As noted above, further assessment will be provided by the Applicant at Deadline 6, using agreed collision risk modelling methods as requested by the RSPB.
			<p><u>Lesser black-backed gull management measures at the Alde-Ore Estuary SPA</u></p> <p>The Applicant discussed management measures at the Alde-Ore Estuary SPA in the Information for HRA [APP-045], para. 201 and stated that such measures could 'readily offset' the in-combination collision mortality. We disagreed that measures such as predation management could be regarded as mitigation for collision mortality. Whilst we still disagree with some of the points made regarding the likely effectiveness of such measures, the Applicant has since confirmed that these measures are not proposed as mitigation, therefore this area of disagreement is resolved.</p> <p>With regard to mitigation, a DML condition was agreed for East Anglia THREE which raised the draught height of a proportion of the turbines. This condition was for the purpose of minimising collision risk, as this reduces the number of birds flying at Potential Collision Height and hence reduces likely collision mortality. We note that the Applicant has stated that this is not necessary as impacts are not predicted to be significant, however, given the concerns regarding the collision mortality predictions, we would welcome exploration of the potential for a similar approach to be taken by Norfolk Vanguard.</p>	<p>The Applicant notes the RSPB's acknowledgement that lesser black-backed gull management measures were not proposed as mitigation for the Project.</p> <p>With respect to the predicted magnitude of collisions at Norfolk Vanguard alone, the Applicant notes that Natural England has confirmed that these will not be significant for this (or any) species (Natural England's comments on Appendix 3.2: Collision Risk Modelling update and clarification REP1-008), and therefore no design revisions are considered necessary.</p>

1.4 Ecology Offshore – Marine Mammals

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
4.8	TWT	In your Written Representations [REP1-123 and REP1-124 respectively], and also TWT at the offshore environmental matters Issue Specific Hearing 2 (ISH2) [EV-009 and EV-010] and in its Post Hearing Submission [REP3-063], you consider that an approach of setting noise limits should be adopted and that you do not support the current Statutory Nature Conservation Bodies (SNCB) advice in this regard. The ExA notes the two reports that TWT has cited in [REP3-063] with attached hyperlinks, but please provide any further relevant scientific evidence or justification that you consider casts doubt on the existing SNCB approach. Also, if you are able to, please provide a copy of the statement that was released on 7 February 2019 that TWT has referred to in [REP3-063].	<p>The evidence which casts doubt on the proposed SNCB area based thresholds is that the thresholds are not underpinned by any evidence. This is recognised by Natural England in the response to deadline 4 for the Hornsea Three offshore wind farm examination (page 49)¹ Therefore, there is a lack of confidence that the chosen thresholds will ensure no adverse effect on site integrity. In contrast, the noise limits used in Germany area based on scientific data and are tried and tested.</p> <p>We reiterate that the proposed SNCB thresholds have still not yet been approved.</p> <p>We are in discussion with JNCC on sharing the statement released on the 7th February.</p>	<p>The Applicant maintains that this highlights the importance of the In Principle Site Integrity Plan (IPSIP) (document 8.17) which provides a framework to agree mitigation based on the latest guidance, scientific understanding and technology at the pre-construction stage.</p> <p>In the response to Offshore Issue Specific Hearing (ISH2) Action Point 2, Consideration of Cumulative Impacts on Marine Mammals - Delivery of the Site Integrity Plan (document reference ExA; ISH2; 10.D4.4), the Applicant has outlined a range of management strategies that could be adopted. This includes noise thresholds (e.g. as adopted in the Netherlands and Germany). As discussed at ISH2 and as detailed in section 6.1.2 of the IPSIP (document 8.17), the use of noise reduction systems is being considered by the Applicant.</p> <p>The wording of the DCO removes any uncertainty regarding the potential for an Adverse Effect on Integrity (AEIOI) through the commitment in Schedules 9 and 10, Condition 14(1)(m) and Schedules 11 and 12, Condition 9(1)(l) which ensures that piling cannot commence until <i>"the MMO is satisfied that the plan, provides such mitigation as is necessary to avoid adversely affecting the integrity"</i>.</p>
4.8	WDC	In your Written Representations [REP1-123 and REP1-124 respectively], and also TWT at the offshore environmental matters Issue Specific Hearing 2 (ISH2) [EV-009 and EV-010] and in its Post Hearing Submission [REP3-063], you consider that an approach of setting noise limits should be adopted and that you do not support the current Statutory Nature Conservation Bodies (SNCB) advice in this regard. The ExA notes the two reports that TWT has cited in [REP3-063] with attached hyperlinks, but please provide any further relevant scientific evidence or justification that you consider casts doubt on the existing SNCB approach. Also, if you are able to, please provide a copy of the statement that was released on 7 February 2019 that TWT has referred to in [REP3-063].	<p>Papers sent with this response which highlight the concerns over the SNCB approach. Also the workshop reports where the threshold approach was proposed and discussed at a joint stakeholder workshop in 2016, and the approach was objected to by both NGOs, industry and regulators. Additionally in the current Review of Consents, being undertaken by The Department for Business, Energy and Industrial Strategy (BEIS), it is acknowledged the proposed approach by the SNCBs has not been agreed upon.</p>	
4.9	NE	At the offshore environmental matters Issue Specific Hearing 2 (ISH2) [EV-009 and EV-010] the Applicant stated that other offshore construction techniques, such as vibration or downward impulses, were being considered. At present Condition 14(f) of Schedules 9 and 10 and Condition 9(f) of Schedules 11 and 12 of the dDCO only requires the submission of a Marine Mammal Mitigation Protocol (MMMP) in the event that driven or part-driven piles are proposed to be used. Furthermore, Conditions 14(m) of Schedules 9 and 10 and 9(l) of Schedules 11 and 12 contain similar wording in relation to the submission of a Site Integrity Plan (SIP). In the event that the Applicant proposed to utilise any other construction techniques, instead of driven or part-driven piling, do you consider that a MMMP and SIP should still be submitted? Please justify your answer.	<p>Natural England consider a MMMP and SIP should still be submitted in order to mitigate the injurious impacts of any additional noise introduced into the marine environment from construction and to ensure there is no adverse effect on integrity on the SNS SCI. We would welcome the opportunity to work with the Applicant to ensure the mitigation secured in the MMMP is appropriate for the construction method being used.</p>	<p>The Applicant notes this response and proposes to amend the draft Development Consent Order (dDCO) to require the production of the Site Integrity Plan (SIP) and Marine Mammal Mitigation Protocol (MMMP) in the event that piled foundations are used, rather than only in the event of driven or part driven piles. This will therefore allow further consideration of any installation method (e.g. vibro-piling) for piled foundations during the development of the final SIP, prior to construction.</p>
4.9	MMO	At the offshore environmental matters Issue Specific Hearing 2 (ISH2) [EV-009 and EV-010] the Applicant stated that other offshore construction techniques, such as vibration or downward impulses, were being considered. At present Condition 14(f) of Schedules 9 and 10 and Condition 9(f) of Schedules 11 and 12 of the dDCO only requires the submission of a Marine Mammal Mitigation	<p>The MMO acknowledge the observation of the ExA on the additional construction techniques and changes within the dDCO. The MMMP is a protocol for the mitigation of potential injury or mortality of marine mammals caused by underwater noise impacts arising from percussion pile driving during Norfolk Vanguard construction. The MMO believe that if alternative offshore construction techniques are used this would not fit with the purpose of the document as it is percussive piling is the only technique assessed which could</p>	<p>As stated above, the Applicant proposes to amend the dDCO to require the production of the SIP and MMMP in the event that piled foundations are used.</p>

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		Protocol (MMMP) in the event that driven or part-driven piles are proposed to be used. Furthermore, Conditions 14(m) of Schedules 9 and 10 and 9(l) of Schedules 11 and 12 contain similar wording in relation to the submission of a Site Integrity Plan (SIP). In the event that the Applicant proposed to utilise any other construction techniques, instead of driven or part-driven piling, do you consider that a MMMP and SIP should still be submitted? Please justify your answer.	<p>cause injury or mortality through noise. Vibration pilling and downward impulses do not give off significant noise impacts.</p> <p>The purpose of the SIP is to set out the approach for Norfolk Vanguard Limited to deliver any potential mitigation measures during construction, to ensure the avoidance of significant disturbance of harbour porpoise in relation to the SNS cSAC site Conservation Objectives. The SIP provides a mechanism for the development of technology to be included within the document. The MMO will defer to the advice of Natural England as to if this mitigation should be needed for any other techniques of foundation installation</p>	
4.9	TWT	At the offshore environmental matters Issue Specific Hearing 2 (ISH2) [EV-009 and EV-010] the Applicant stated that other offshore construction techniques, such as vibration or downward impulses, were being considered. At present Condition 14(f) of Schedules 9 and 10 and Condition 9(f) of Schedules 11 and 12 of the dDCO only requires the submission of a Marine Mammal Mitigation Protocol (MMMP) in the event that driven or part-driven piles are proposed to be used. Furthermore, Conditions 14(m) of Schedules 9 and 10 and 9(l) of Schedules 11 and 12 contain similar wording in relation to the submission of a Site Integrity Plan (SIP). In the event that the Applicant proposed to utilise any other construction techniques, instead of driven or part-driven piling, do you consider that a MMMP and SIP should still be submitted? Please justify your answer.	Mitigation is essential for any construction technique which could have an adverse effect on the Southern North Sea SCI or European Protected Species. Techniques such as vibration or downward impulses, if not done so already, would need to be assessed to understand the impact of the activity of marine mammals and mitigation put in place where necessary.	As stated above, the Applicant proposes to amend the dDCO to require the production of the SIP and MMMP in the event that piled foundations are used. This will therefore allow further consideration of any installation method (e.g. vibro-piling) for piled foundations during the development of the final SIP, prior to construction.
4.9	WDC	At the offshore environmental matters Issue Specific Hearing 2 (ISH2) [EV-009 and EV-010] the Applicant stated that other offshore construction techniques, such as vibration or downward impulses, were being considered. At present Condition 14(f) of Schedules 9 and 10 and Condition 9(f) of Schedules 11 and 12 of the dDCO only requires the submission of a Marine Mammal Mitigation Protocol (MMMP) in the event that driven or part-driven piles are proposed to be used. Furthermore, Conditions 14(m) of Schedules 9 and 10 and 9(l) of Schedules 11 and 12 contain similar wording in relation to the submission of a Site Integrity Plan (SIP). In the event that the Applicant proposed to utilise any other construction techniques, instead of driven or part-driven piling, do you consider that a MMMP and SIP should still be submitted? Please justify your answer.	Due to the location of Norfolk Vanguard lying directly within the SNS SCI, in both summer and winter habitat for harbour porpoises with Norfolk Vanguard West overlapping the year round area (JNCC, 2017, 2016), we strongly recommend that both MMMP and SIP will still need to be submitted to ensure no Adverse Effect on Integrity (AEol) of the site and the harbour porpoise population it supports. All cetaceans are European Protected Species (EPS), and the requirement to understand and mitigate impacts to ensure strict protection of EPS, including all cetacean species, remains. Whilst the impacts from pile driving remain our primary concern, other construction techniques will result in significantly different impacts on cetaceans and the harbour porpoise population supported by the Southern North Sea SCI (SNS SCI), therefore no matter the construction techniques used, MMMPs and SIPS will still be required	As stated above, the Applicant proposes to amend the dDCO to require the production of the SIP and MMMP in the event that piled foundations are used.
4.10	WDC	In your Written Representation [REP1-124] you indicate that you do not wish to see any pile driving, but you also raise concerns about the potential impact on prey species should gravity-based foundations be used. Which of these construction techniques do you consider would have the more significant effects in the long term, and overall which would you prefer to see utilised?	The impacts from pile driving are our primary concern. Research has shown the impacts from piling activities during construction to have significant impacts on harbour porpoise. Less is known about gravity-based foundations, but there are concerns about changes to the sea bed and therefore prey species. We continue to recommend that foundations requiring pile driving are not used, and would prefer to see gravity foundation instead.	As stated in the Applicant's response to WDC's written representation (in document reference ExA; WRR: 10.D2.2), the worst case scenario for underwater noise associated with piling, as well as the worst case for seabed disturbance/habitat loss has been assessed in ES Chapter 12 Marine Mammals. As stated in response to the Examining Authority's (ExA's) first written questions (Q4.3), based on current technology and market availability, a monopile solution is likely to be the most economical solution available for the size of wind turbines proposed and water depths within the Norfolk Vanguard offshore wind farm sites. Removing piled foundations from the consent envelope for Norfolk Vanguard would therefore increase the cost of energy to the consumer and significantly affect the commercial viability of the project.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
4.11	MMO	A maximum hammer energy of 5,000kJ has now been specified in condition 14(1)(n) of Schedules 9 and 10 of the dDCO [REP2-017]. However, please comment on whether or not there would be any benefits in having a range of maximum hammer energies being specified in the dDCO, for example the 2,700kJ figure that relates to the worst-case scenario for a 9MW pin pile structure?	The MMO would agree that there would be a benefit to have a range of hammer energies within the DCO, this would highlight between the maximum hammer energy for each design parameter. This would also highlight the need for a variation if any increase to the hammer energy for each worst case scenario was required.	As stated in the Applicant's response to this question submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6), 5,000kJ is the worst case scenario for auditory injury and spatial effects on marine mammals at any one time and has therefore been included in the dDCO. Consideration is also given to disturbance and temporal effects associated with pin-piles in ES Chapter 12 Marine Mammals. A number of methods are used to assess the potential effects, including: <ul style="list-style-type: none"> Underwater noise modelling based on a 2,700kJ hammer and various hearing thresholds (e.g. NOAA criteria for temporary threshold shift/fleeing response and possible behavioural responses based on Southall <i>et al.</i>, 2007 and Lucke <i>et al.</i>, 2009); and Assessment of disturbance based on the 26km range advised by Statutory Nature Conservation Bodies (SNCBs) (which does not take account of underwater noise modelling, pile size or hammer energy). Given the range of options for assessing behavioural effects, the Applicant considers that it is not appropriate to define parameters associated with this (e.g. 2,700kJ) in the DCO. The Applicant also notes that Natural England, in their response dated 13 March 2019, have confirmed that they are satisfied with the hammer energy figure of 5,000kJ as a worst case figure being secured in the Deemed Marine Licences (DML)s. The Applicant therefore considers that the wording of this condition should remain as it is currently drafted.
4.11	NE	A maximum hammer energy of 5,000kJ has now been specified in condition 14(1)(n) of Schedules 9 and 10 of the dDCO [REP2-017]. However, please comment on whether or not there would be any benefits in having a range of maximum hammer energies being specified in the dDCO, for example the 2,700kJ figure that relates to the worst-case scenario for a 9MW pin pile structure?	Natural England is satisfied with the inclusion of 5,000kJ as the maximum hammer energy.	The Applicant welcomes this confirmation.
4.11	WDC	A maximum hammer energy of 5,000kJ has now been specified in condition 14(1)(n) of Schedules 9 and 10 of the dDCO [REP2-017]. However, please comment on whether or not there would be any benefits in having a range of maximum hammer energies being specified in the dDCO, for example the 2,700kJ figure that relates to the worst-case scenario for a 9MW pin pile structure?	WDC can see the benefit of having maximum hammer energies specified in the dDCO, for the different scenarios. This would help ensure that the worst-case scenarios modelled by the applicant aren't breached, which would result in greater impacts than predicted. We agree that these maximum hammer energies should be based on the worst-case scenarios as modelled by the applicant.	The Applicant refers to its response to this question submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6). The figure of a 5,000kJ hammer energy stated in the DMLs is the worst case scenario for auditory injury and spatial effects on marine mammals at any one time. This condition therefore restricts the Applicant to what has been assessed as the worst case modelling. The Applicant also notes that Natural England, in their response dated 13 March 2019, have confirmed that they are satisfied with the hammer energy figure of 5,000kJ as a worst case figure being secured in the DMLs. The Applicant therefore considers that the wording of this condition should remain as it is currently drafted.
4.11	TWT	A maximum hammer energy of 5,000kJ has now been specified in condition 14(1)(n) of Schedules 9 and 10 of the dDCO [REP2-017]. However, please comment on whether or not there would be any benefits in having a range of maximum hammer energies being specified in the dDCO,	TWT confirm that it would be beneficial to include a range of maximum hammer energies specified within the dDCO, including the maximum hammer energy for pin piles.	The Applicant refers The Wildlife Trusts (TWT) to the Applicant's comments on the response from WDC and the MMO at question 4.11 above.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		for example the 2,700kJ figure that relates to the worst-case scenario for a 9MW pin pile structure?		

1.5 Ecology Offshore - Other

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
5.24	NE	Further to the Applicant's response to ExQ1 5.12 [REP1-007] and your Statement of Common Ground [REP1-049] please justify why you consider that cable repairs should not be allowed for in the dDCO providing that such repairs would fall within the maximum parameters that have been assessed in the ES.	Natural England would welcome the inclusion of cable repairs within the DCO/DML. However, the parameters and impacts of such repairs need to be fully assessed and appropriately secured. Natural England's main concerns relate to impacts to Haisborough Hammond and Winterton (HHW) SAC and not the inter array cables.	<p>Appendix 1 of the Outline Offshore Operation and Maintenance Plan (OOMP) includes cable repairs. Cable repairs are therefore secured in the DCO, through Schedules 9 and 10, Condition 14(1)(j) and Schedules 11 and 12, Condition 9(1)(j) which require an offshore operation and maintenance plan, in accordance with the Outline OOMP (document 8.11) to be agreed with the MMO.</p> <p>As stated in the Errata report (document reference: Pre-ExA; Errata; 9.4), Appendix 1 of the Outline OOMP should refer to four cable repairs in line with the assessment provided in the ES.</p> <p>The Applicant also notes that Natural England's main concerns are related to the Haisborough Hammond and Winterton (HHW) Special Area of Conservation (SAC). In the Applicant's Deadline 4 submission, the Applicant proposed that mitigation associated with the HHW SAC is secured in a single plan (a Norfolk Vanguard Haisborough, Hammond and Winterton SAC Site Integrity Plan) and through a separate condition in the transmission asset DMLs. This plan will include potential repair works in the HHW SAC.</p> <p>The Applicant is engaging with Natural England as to the precise wording of the condition and content for the plan.</p>
5.26	NE	In Annex C of its WR [REP1-088] Natural England advises that a pre-construction sandwave levelling report and assessment is required. Do you consider that this is adequately secured in the dDCO, for example in the wording of Condition 13 of Schedules 11 and 12? If not, then suggest additional wording that you consider should be included.	For clarification, the requested report and assessment should be informed by pre construction survey data, but the report should set out the exact/finalised methodologies along the section of the Export cable route within HHW SAC and review the potential impacts to the features to ensure they are within the parameters of those assessed by the SoS Appropriate Assessment (AA). If not then a further AA by the MMO will be required.	<p>As discussed in the joint position statement (document reference ExA; AS; 10.D4.8), the Applicant is progressing an interim cable burial study for the Haisborough, Hammond and Winterton SAC with a view to justifying and potentially refining the cable protection requirements.</p> <p>The Applicant also acknowledges that as a European site, the Haisborough, Hammond and Winterton SAC has a special environmental status. For this reason, in the Applicant's Deadline 4 submission the Applicant has proposed that there is benefit in securing the mitigation associated with the HHW SAC in a single plan (a Norfolk Vanguard Haisborough, Hammond and Winterton SAC Site Integrity Plan) and through a separate condition in the transmission asset DMLs. This would include the installation methodology for cables in the HHW SAC.</p> <p>The Applicant is engaging with Natural England as to the precise wording of the condition and content for the plan.</p>

1.6 Construction - Offshore

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
Not Applicable				

1.7 Offshore Archaeology and Cultural Heritage

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
7.6	Historic England	Please provide an update on your discussions in relation to the wording of Condition 15(2) of the DML (Schedule 9-10) and Condition 10(2) of the Transmission DMLs (Schedules 11-12).	<p>We have discussed this matter with the MMO and therefore the response we provided here is our agreed position that the wording of Condition 15(2) within: Schedule 9, Generation Assets DML (Licence 1 – Phase 1); and Schedule 10, Generations Assets DML (Licence 2 – Phase 2) should be amended so that to submission for approval is at least six months prior to the intended commencement of licensed activities.</p> <p>We add that within the Transmission DML, Condition 10(2) within: Schedule 11, Transmission Assets DML (Licence 1 – Phase 1); and Schedule 12, Transmission Assets DML (Licence 2 – Phase 2) should also be amended so that to submission for approval is at least six months prior to the intended commencement of licensed activities.</p> <p>Furthermore, we add that it is important to ensure a consistent approach and a viable timetable for advice to be produced post-consent, should this project be successful in securing the required permissions, so we request that the following conditions: Schedule 9, Generation Assets DML (Licence 1 – Phase 1) – Condition 14(1)(h); Schedule 10, Generations Assets DML (Licence 2 – Phase 2) – Condition 14(1)(h); Schedule 11, Transmission Assets DML (Licence 1 – Phase 1) – Condition 9(1)(h); and Schedule 12, Transmission Assets DML (Licence 2 – Phase 2) – Condition 9(1)(h) are amended as follows:</p> <p><i>“An archaeological written scheme of investigation in relation to the offshore Order limits seaward of mean low water, which must be submitted at least <u>eight months</u> prior to commencement of the licensed activities and must accord with the outline written scheme of investigation (offshore) and industry good practice, in consultation with the statutory historic body (and, if relevant, North Norfolk District Council).”</i></p> <p>We propose this amendment so that any post-consent WSI, produced in accordance with the outline WSI (offshore), is subject to consultation with Historic England within a viable timeframe prior to formal approval by the MMO six months before commencement, as defined. This should also allow for compliance with DML Condition 15(2) and 10(2).</p>	<p>The Applicant refers Historic England to the Applicant's response to Q.20.139 submitted at Deadline 4 (document reference ExA; FurtherWQ; 10.D4.6).</p> <p>The Applicant considers that the four month time frame conditioned within the DMLs is appropriate and proportionate to allow the MMO, in consultation with (in this context) Historic England, sufficient time for stakeholder consultation and the provision of comments, whilst ensuring no unnecessary delay to the commencement of development and completion of construction works.</p> <p>This time period is contained on a number of other Offshore Wind Farm (OWF) DCOs (including The East Anglia Three Offshore Wind Farm Order 2017 and Hornsea Two Offshore Wind Farm Order 2016) which are not dissimilar in size and principle to Norfolk Vanguard. Notwithstanding this, the Applicant has suggested a mechanism whereby the MMO will only be required to determine an application once the MMO (for itself or on behalf of its statutory consultee) has received all necessary information to do so. The MMO has one month to request the further information. This would therefore extend the period of determination to at least five months, and longer (closer to the six months requested) once an allowance is made for the Applicant to prepare and provide the information sought.</p> <p>The Applicant considers that the new drafting put forward in Condition 15 (Generation DMLs) and Condition 10 (Transmission DMLs) strikes a fair balance and is therefore a reasonable and pragmatic way forward, especially in view of the wider policy points that the Applicant identifies in its response submitted at Deadline 4.</p>
7.6	MMO	Please provide an update on your discussions in relation to the wording of Condition 15(2) of the DML (Schedule 9-10) and Condition 10(2) of the Transmission DMLs (Schedules 11-12).	<p>The MMO are in agreement with Historic England that the revised timescales should increase from 4 months to 6 months. The MMO believe this is for all documentation including condition 14 (1) (schedule 9-10) and condition 9 (1) (Schedules 11-12) and not just the Written Scheme of Investigation. The MMO is still in discussion with the applicant through the SoCG as the applicant's position has not changed.</p>	<p>The Applicant notes the MMO's response. However, the Applicant would highlight the slight inconsistency between the MMO's position and Historic England's position. The MMO state that the 6 month timeframe should apply to all documentation and not just the Written Scheme of Investigation (WSI); whereas Historic England are now requesting a period of 8 months for sign-off for the offshore WSI. In any event, the Applicant disagrees with the principle of any extension to the timeframes for the reasons set out in: (1) response to Q.20.139 submitted at Deadline 4 (document reference ExA; FurtherWQ; 10.D4.6), and (2) the Applicant's comments on Historic England's response to Q.7.6 above.</p>
7.7	Historic England	Are you satisfied with the proposed 50m archaeological exclusion zone around A1 sites and magnetic only anomalies?	<p>We are aware from the Environmental Statement, Volume 1, Chapter 171 (Offshore and Intertidal Archaeology and Cultural Heritage) and the Outline Written Scheme of Investigation (Offshore)2 that “A1” anomalies were identified as follows:</p> <ul style="list-style-type: none"> • NV East – 5; • NV West – 11; 	<p>The Applicant notes Historic England's response. The Applicant is committed to engaging with Historic England and as such Condition 14(1)(h) secures that a Written Scheme of Investigation (offshore) in accordance with the Outline Written Scheme of Investigation (document reference 8.6) must be agreed with the MMO in consultation with Historic England, as the statutory historic body.</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
			<ul style="list-style-type: none"> Offshore cable corridor – 26 <p>The accompanying text of the Outline Written Scheme of Investigation (Offshore) (paragraph 18) defines “A1” features “...as being of archaeological interest, comprising wrecks, magnetic only buried anomalies and larger items of debris and debris fields”. It is apparent from the information provided that the features classified as “A1” can represent “substantial buried ferrous remains”, within sand-wave systems and that some of these wrecks were not previously charted. Therefore, in regard to the proposed “embedded mitigation” strategy set out in Chapter 17 (section 17.7.2) that 50m AEZs are used around the extents of identified and/or known wreck sites (classified as “A1”) and 50m Archaeological Exclusion Zones (AEZs) are used around the point locations of “A1” magnetic only anomalies, we support this strategy of avoidance, such that no development related activities will take place within any identified “A1” AEZs.</p> <p>It is also a relevant matter that we highlight our support for the inclusion of Offshore Archaeology and Cultural Heritage within the In Principle Monitoring Plan3 (see Table 4.6) and that any pre-construction surveys use surveying techniques inclusive of a 500m buffer area around the site of each proposed works and the investigation and identification of seabed features of known (“A1”) and potential (“A2”) archaeological interest within the survey area as relevant to the modification of agreed AEZs or adoption of new AEZs. However, the Outline Written Scheme of Investigation (Offshore) does not include any cross-reference to the In Principle Monitoring Plan – a matter which must be addressed post-consent as part of the preparation of the project-specific Written Scheme of Investigation (Offshore), as per DML conditions as identified above.</p> <p>We also consider it a relevant matter that we highlight to you the proposed embedded mitigation for seabed anomalies classed as “A2”; defined as: <i>“...possible anthropogenic origin and have the potential to represent archaeological material on the seabed of maritime or aviation origin. Magnetic only anomalies (without visible surface expression) have the possibility to be buried objects with ferrous content that are of archaeological potential.”</i></p> <p>It is therefore apparent that “A2” anomalies may include “debris field”, “seafloor disturbance” or “magnetic”; such that within the proposed development area the following “A2” anomalies are identified:</p> <ul style="list-style-type: none"> NV East – 312; NV West – 172; Offshore cable corridor – 706 <p>We are also aware that the identification of anomalies of possible archaeological interest (e.g. employing a classification scheme such as A1, A2 and A3 etc.) will probably be subject to revision, should consent be obtained, as the consented development area is re-surveyed at the necessary resolution for detailed design purposes.</p> <p>We appreciate that other survey techniques, not employed for EIA preparation, might also be used as necessary to support delivery of the selected engineering design of the project (e.g. as dictated by the number and configuration of turbines, offshore substations and foundation type etc.). Therefore the timely preparation and consultation with Historic England of the Written Scheme of Investigation (Offshore) is an important stage prior to formal agreement with the MMO, so that avoidance is possible of identified anomalies either by informing the micro-siting of any works or further investigation of any anomalies of archaeological interest that cannot be avoided.</p>	

1.8 Fishing and Navigation

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
8.8	National Federation of Fishermen's Organisations (NFFO)	Further to the amended dDCO [REP1-017] and the comments made at ISH2 [EV-009 and EV-010] please respond to the Applicant's removal of floating foundations for turbines from the project design envelope. In particular, please expand on your comments in Table 3 of your Statement of Common Ground [REP1-047] in which you state that for fixed foundations and a preferred spacing of 2km+ some level of fishing activity would co-exist.	No response submitted at Deadline 4.	No response required.
8.8	VisNed	Further to the amended dDCO [REP1-017] and the comments made at ISH2 [EV-009 and EV-010] please respond to the Applicant's removal of floating foundations for turbines from the project design envelope. In particular, please expand on your comments in Table 3 of your Statement of Common Ground [REP1-047] in which you state that for fixed foundations and a preferred spacing of 2km+ some level of fishing activity would co-exist.	No response submitted at Deadline 4.	No response required.

1.9 Marine geology, oceanography and physical processes, marine water and sediment quality

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
Not Applicable				

1.10 Construction Onshore

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
10.2	Norfolk County Council (NCC)	REP3-060 refers to Norfolk County Council's Environmental Lighting Zones Policy and Maps. Could you please provide a copy of this policy and comment on the concerns raised.	No response	The Applicant has provided a detailed response to concerns raised in REP-060 in response to Q10.3 of the Examiner's second written questions submitted at Deadline 4 (ExA; Further WQ; 10.D4.6).
10.5	North Norfolk District Council (NNDC)	Clarification Note on Landfall 24-hour vehicle requirements: the Applicant asserts that any 24-hour working which may be needed at the landfall will be agreed with the relevant planning authority in advance of construction in accordance with requirement 26 DCO. However requirement 26 provides that ' <i>outside the hours specified in paragraph (1), construction work may be undertaken for essential and non-intrusive activities, including but not limited to.....(c) onshore transmission works at the landfall.....</i> ' Please comment on whether or not requirement 26 would offer any limitation upon or sufficient control	All construction work outside of agreed hours (other than emergency works set out at item k)) needs to be agreed in writing in advance with the relevant planning authority. It is not clear at this stage what that process of agreement would entail but it is assumed that it would fall under the framework set out in Schedule 15 (but with the amendments proposed by NNDC at Deadline 3). NNDC would welcome early engagement on proposed activities and mitigation measures so as to avoid the potential for any adverse impacts, with particular reference to daily start up and shut down activities - Requirement 26 (2)(h).	The Applicant refers North Norfolk District Council (NNDC) to the Applicant's response to Q.10.5 submitted at Deadline 4 (document reference ExA; FurtherWQ; 10.D4.6). As the Applicant explains in its response to Q10.5, the process of agreement would only apply to non-emergency, essential (but intrusive) activities and would only be focused on the specific duration and timing of the works to be undertaken rather than the principle of whether those works could be undertaken outside of the stated construction hours. These works, by their very nature, are critical to the delivery of the project and technical and engineering requirements may necessitate periods of operation that exceed the specified hours within Requirement 26(1). The discharge process would operate under the provisions of Schedule 15.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
10.8	NCC	<p>in relation to the hours of working for landfall transmission works.</p> <p>The report referred to in the previous question explains the basis on which generated traffic was assigned onto the highway network in terms of traffic flows and using a sensitivity methodology. Is this distribution methodology and the assumptions applied consistent with those applied in the Transport Assessment the Norfolk Vanguard project?</p> <p>It is noted that the outline CTMP in relation to The Street and the B1145 at Cawston will be revisited in light of the updated data in this report. Please provide the ExA with an update as to progress in relation to these matters.</p>	<p>The applicant's agent has indicated the developer is willing to consider mitigation measures at both of these locations, however as yet we do not have a firm commitment and have not been provided with any plans/documents to show the intended nature of the mitigation measures. The County Council maintains its position that without appropriate mitigation measures this development will have a significant adverse impact upon the satisfactory functioning of local highway network and also highway safety</p>	<p>The Applicant has reviewed the package of measures proposed by Hornsea Project 3 along The Street at Oulton. The Applicant intends to put forward the same package of measures in order to achieve the same outcomes. Norfolk Vanguard and Hornsea Project 3 will coordinate the delivery of these measures and this will be captured in updates to the projects' respective Outline Traffic Management Plan (OTMP)s.</p> <p>The mitigation proposed is identified within the Applicant's cumulative traffic impact assessment submitted to the examination at Deadline 5 (ExA; ISH1; 10.D5.3).</p> <p>Subject to further engagement with Norfolk County Council these measures will be captured within an updated OTMP and secured through Requirement 21 of the dDCO.</p> <p>The Applicant is also aware that Norfolk County Council and Hornsea Project 3 are discussing a package of measures along the B1145 at Cawston (a shared road link for both projects) to address potential cumulative impacts with Norfolk Vanguard. Updated information on this package of measures was submitted to the Hornsea Project 3 examination on 18th March 2019. The Applicant will review package of measures to determine if they deliver the required levels of mitigation set out in the Applicant's cumulative traffic impact assessment submitted to the examination at Deadline 5.</p>

1.11 Traffic, Transport and highway safety

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
11.33	NCC	<p>Cumulative impacts with Hornsea Three Project (H3)</p> <p>i. To the Applicant: the ExA refers to your comments in [REP3-003] confirming that you will review the position with regard to cumulative impacts of both projects in light of the revised traffic generation figures submitted to the H3 examination. You confirm that you will include consideration of different scenarios in terms of the sequencing of the two projects. Please confirm that you will cater for the situations outlined in Norfolk County Council's RR [REP3-054]. In addition please confirm that you will cater for the mitigation measures needed in a scenario in which H3 does not proceed and Norfolk Vanguard proceeds on its own.</p> <p>To the County Council: please confirm your position in relation to the mitigation measures necessary should Norfolk Vanguard proceed in isolation.</p>	<p>The level of mitigation in highway terms will be the same regardless of whether or not Vanguard proceeds in isolation.</p> <p>However, it should be noted that part of the proposed highway improvement scheme involves the re-grading of a hump in The Street. This re-grading has not been requested by the LHA but rather is being provided to overcome a residential amenity issue. Accordingly the LHA makes no comment upon that particular aspect of the scheme and leaves this for the District Council to advise upon.</p>	<p>The Applicant has reviewed the package of measures proposed by Hornsea Project 3 along The Street at Oulton. The Applicant intends to put forward the same package of measures in order to achieve the same outcomes. Norfolk Vanguard and Hornsea Project 3 will coordinate the delivery of these measures and this will be captured in updates to the projects' respective OTMPs.</p> <p>The mitigation proposed is identified within the Applicant's cumulative traffic impact assessment submitted to the examination at Deadline 5 (ExA; ISH1; 10.D5.3). Subject to further engagement with Norfolk County Council these measures will be captured within an updated OTMP and secured through Requirement 21 of the dDCO.</p> <p>The Applicant is also aware that Norfolk County Council and Hornsea Project 3 are discussing a package of measures along the B1145 at Cawston (a shared road link for both projects) to address potential cumulative impacts with Norfolk Vanguard. Updated information on this package of measures was submitted to the Hornsea Project 3 examination on 18th March 2019. The Applicant will review package of measures to determine if they deliver the required levels of mitigation set out in the Applicant's cumulative traffic impact assessment submitted to the examination at Deadline 5.</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
11.34	NCC	Having regard to the further representations of the Applicant in relation to the question of trenchless crossings of the B1149, do you maintain your position that trenchless crossings are necessary?	The LHA maintains its position that trenchless crossing of the B1149 is necessary for the reasons we have previously provided.	The Applicant's position is set out in response to Q11.35 of the Examiner's second written questions submitted at Deadline 4.
11.36	NCC	Please provide full justification for your contention that trenchless crossing of the A1067 is necessary?	Where a cable duct needs to cross the width of the carriageway, trenchless crossing methods offer particular benefits over open trench excavation. These include minimising disruption to the operation of the network and reduced levels of traffic management. Following the opening of the NDR, the A1067 is now a very heavily trafficked road and is recorded within the County Councils route hierarchy as a principal route which links primary destinations. Given the importance of the route within the hierarchy and the levels of traffic that it now carries, open cut trenches to the A1067 at this point will lead to unacceptable traffic delays. This is particularly the case given the level of traffic mitigation that will be required. In addition to the above, given these higher traffic levels, there is also an issue of long term maintenance to the reinstatement of an open cut trench on a road of this nature.	The Applicant's position on the necessity for a trenchless crossing on the A1067 is set out in response to Q11.35 of the Examiner's second written questions submitted at Deadline 4. The Applicant has committed to undertake additional traffic counts at this crossing to determine if the traffic flows have increased compared to the baseline traffic flows presented in the original assessment and the extent to which this may warrant further mitigation.
11.37	Applicant	Having regard to the response to Q11.36 above, please provide a detailed response at deadline 5		In line with Norfolk County Council (NCC)'s response to Q11.36 and as part of the Expert Topic Group meetings for Norfolk Boreas (Norfolk Vanguard's sister project) the Applicant has been made aware that following the opening of the Norwich Northern Distributor Road (NDR) the A1067 has become more heavily trafficked since the original traffic counts were undertaken to inform the Norfolk Vanguard application. The Applicant has committed to undertake updated traffic counts to determine if the traffic flows have increased compared to the baseline traffic flows presented in the original assessment and the extent to which this may warrant further mitigation. Once this updated traffic count data is available the Applicant will discuss the findings with Norfolk County Council.

1.12 Air quality and human health

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
12.10	National Grid	In relation to the Norfolk Vanguard and Hornsea 3 crossing point, at the Open Floor Hearing the Applicant stated that if different technologies were used (HVDC and HVAC) the magnetic fields would not interact with each other and can therefore be considered separately. At the Open Floor Hearing, Mr Pearce put forward a conflicting argument that HVAC cables would induce currents in HVDC. In his response submitted at Deadline 3 he refers to National Grid information and research carried out by Andrew Goldsworthy that supports his assertion. Please comment on the concerns raised by Mr Pearce and provide further information on any effects that would result from HVAC and HVDC cables crossing, including effects on both people and the environment i.e. geology, hydrology and ecology. Would any effects vary dependent on which cables go over or under each other? The	No response provided	N/A

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		cables have a minimum and maximum depth for heat dissipation, what would be the maximum depth required to achieve adequate separation between the two cables?		
12.12	Breckland Council (BC)	Can the Council please confirm that the Environmental Health Team have had regard to the support information submitted by Necton Parish Council at Deadline 1 which included a facsimile communication from 1996 pertaining to radioactive substance risk and explain if this does or not change their position in relation to the duty to investigate	No response	No response
12.13	Ministry of Defence	In your response to the ExQ1, dated 25 January 2019 [Rep-129] you state that question 17.8, which related to the 1996 F16 plane crash, had been passed on to the relevant department. Could you please provide a response to this question?	I submitted a response to this question (17.8) concerning this plane crash on the 13th February 2019. In response to the above follow up question, I therefore re-submit the original response that I provided on behalf of the MOD on this issue. Please refer to the e-mail below and attached documents.	The MoD's response refers to a pack of information that was received separately by the Applicant from George Freeman MP on 20 December 2018. As detailed in the Applicant's response to Q12.9 submitted at Deadline 1 (ExA; WQ; 10.D1.3), this information relates to the recovery and remediation exercise at the site of the plane crash, produced at the time by the Royal Air Force. The Applicant has set out the control measures for potentially contaminated land within the outline Code of Construction Practice (OCocP) which is secured by DCO Requirement 20(2)(d). This approach has been agreed by the Environment Agency and is set out in a Statement of Common Ground submitted at Deadline 4 (Rep2-SOCG-6.1).
12.14	BC	Section 26.6.1 of ES Chapter 26 [APP-350] states that, as the Swaffham Air Quality Management Area (AQMA) is approximately 1km south of the A47, it is not anticipated that there would be any significant increases in pollutant concentrations within the AQMA. Do you agree with this assessment and, if not, please explain why not?	No response	The air quality impact assessment methodology used by the Applicant along with the assessment findings and mitigation, are all agreed with Breckland Council in the Statement of Common Ground submitted at Deadline 4 (REP2-SOCG-2.1).

1.13 Noise and Vibration

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
13.15	Broadland District Council (BDC)	What implications does Appeal Ref: APP/K2610/A/14/2212257 have for the proposed development? Was the impact of noise and vibration on the Old Railway Gatehouse taken into consideration?	It is considered that the Inspector's decision to dismiss the appeal (PINS ref: APP/K2610/A/14/2212257) is particularly relevant as the applicant's proposed route of vehicular access for heavy goods construction vehicles and staff vehicles to and from the proposed cable logistics compound and the mobilisation compound on Heydon Road which connects to The Street and in turn connects to the junction with the B1149 is the same as that considered for the dismissed appeal. In addition, The Street is also proposed to be the route from the B1149 to the main construction compound for Orsted's wind farm proposals which will accommodate heavy goods construction vehicles and staff vehicles to and from their compound. The appeal proposal was for an anaerobic digester (AD) plant on the former Oulton airfield and The Street was identified for the delivery of maize and grass for the AD plant, it is noted that the appeal	The Applicant's position is set out in response to Q13.15 of the Examiner's second written questions submitted at Deadline 4. The Applicant has submitted a cumulative traffic impact assessment to the examination at Deadline 5 (ExA; ISH1; 10.D5.3), which includes consideration of potential cumulative noise and vibration effects to residential receptors on shared links, including The Old Railway Gatehouse. Mitigation has been committed to (re-grading the carriageway at the existing road hump and also the introduction of a temporary speed limit of 30mph) that will reduce residual noise and vibration impacts to negligible.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
			<p>proposal was to install 6 passing places along the length of The Street and that the harvest period for maize is between September to October and the grass harvest is June to early August. The appeal inspector in describing The Street set out that: 'the carriageway is not wide enough for any vehicle larger than a car to pass any other vehicle except at the existing informal 'passing places'. He also noted that the area is a 'highly agricultural area, some movement of crops in large vehicles –tractor/trailer combinations, tankers or other HGV – is normal and to be expected by other road users. He concluded on the highway safety and convenience issue that the appeal proposal 'would be likely to result in harm to highway safety and convenience' and that 'despite the proposed highway works, the cumulative impacts of the proposed development would be severe'.</p> <p>The impact of noise and disturbance was taken into consideration, but vibration was not specifically taken into account during the appeal. In terms of noise and disturbance the appeal inspector concluded that 'the proposed development would, on balance, be likely to result in material harm to the living conditions of residential occupiers of The Old Railway Gatehouse with reference to noise and disturbance'.</p> <p>Therefore, it is considered that the dismissed appeal does have implications for this application as the shortcomings of The Street have been established by the Planning Inspectorate and the cumulative effects of the Norfolk Vanguard and Orsted wind farm proposals will cause a significant intensification of traffic including HGV's and abnormal loads along The Street, substantially more than would have been associated with the AD plant.</p> <p>The full impact of noise, disturbance and vibration from vehicles travelling along The Street in both directions, on the occupiers of The Old Railway Gatehouse, which is located immediately adjacent to The Street, together with any mitigation measures, will need to be taken into account including the cumulative impacts of traffic associated with the Orsted wind farm proposals and the local traffic which already travels along The Street.</p>	
13.16	NCC	At ISH1 Norfolk County Council stated that a package of measures was being considered by Hornsea 3 in relation to mitigating the impact on the occupiers of The Old Railway Gatehouse. Please provide details of the package of measures being considered by Hornsea 3 and comment on whether a similar package of measures should be secured for Norfolk Vanguard?	No response	The Applicant is in discussion with NCC regarding the package of measures proposed by Hornsea Three. The Applicant has reviewed the package of measures proposed by Hornsea Project 3 along The Street at Oulton and intends to put forward the same package of measures in order to achieve the same outcome. Norfolk Vanguard and Hornsea Project 3 will coordinate the delivery of these. This will be captured within an updated OTMP and secured through Requirement 21 of the dDCO.
13.19	BC	dDCO Requirement 27 (R27) sets out that the noise rating level for the operational phase in relation to Work No.8A must not exceed 35dB LAeq (minutes) and 32dB LAeq (15 minutes) in the 100Hz third octave band at any time at a free field location immediately adjacent to any noise sensitive location. Do you agree with the above limits?	No response	The operational noise threshold at the nearest noise sensitive receptors has been agreed with Breckland Council and is secured through DCO Requirement 27 <i>Control of noise during the operational phase</i> . This is agreed in the Statement of Common Ground submitted at Deadline 4 (REP2-SOCG-2.1).

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
13.19	Colin King	<p>As the closest resident to the proposed substation, and the owner of the free field location immediately adjacent to the closest noise sensitive location, (our house) I do not agree with any sound being detectable on the said field. The field is arable, but part is used annually, for the last 5 years, for a summer barbeque, including members of 2 local social badminton clubs that I am involved with, some people camping over. This has led to the intention of developing an original glamping idea, based on a converted 1963 Italian fairground lorry, which has already been purchased. Therefore I consider the field as a noise sensitive location.</p> <p>Susan Falch-Lovesey and Joe Phillips visited the field on 25 Jan 2018, and were made aware of the situation. I got the impression up to that point, Vattenfall thought the field was part of Necton Farms. (the owners of the proposed substation site land) This therefore would have been the assumption through scoping, and PEIR work. Hopefully corrected now, with no irreversible consequences.</p> <p>We feel strongly, that if this development progresses, then our field should not be subject to operational noise from any of the proposed substations, or cumulatively.</p>	<p>As the closest resident to the proposed substation, and the owner of the free field location immediately adjacent to the closest noise sensitive location, (our house) I do not agree with any sound being detectable on the said field. The field is arable, but part is used annually, for the last 5 years, for a summer barbeque, including members of 2 local social badminton clubs that I am involved with, some people camping over. This has led to the intention of developing an original glamping idea, based on a converted 1963 Italian fairground lorry, which has already been purchased. Therefore I consider the field as a noise sensitive location.</p> <p>Susan Falch-Lovesey and Joe Phillips visited the field on 25 Jan 2018, and were made aware of the situation. I got the impression up to that point, Vattenfall thought the field was part of Necton Farms. (the owners of the proposed substation site land) This therefore would have been the assumption through scoping, and PEIR work. Hopefully corrected now, with no irreversible consequences.</p> <p>We feel strongly, that if this development progresses, then our field should not be subject to operational noise from any of the proposed substations, or cumulatively.</p>	<p>Free field location is an acoustic term that refers to the location of noise monitoring that avoids surfaces that reflect sound, with field in this instance is referring to a force or wave. It should not be interpreted to mean fields or gardens.</p> <p>Noise sensitive receptors were agreed with Breckland Council as part of the Evidence Plan Process and have subsequently been agreed within the Statement of Common Ground submitted at Deadline 4 (REP2-SOCG-2.1).</p> <p>Similarly, the operational noise threshold at the nearest noise sensitive receptors has been agreed with Breckland Council and is secured through DCO Requirement 27 Control of noise during the operational phase. This is also agreed in the Statement of Common Ground submitted at Deadline 4.</p>
13.20	BC	Operational noise arising from the modifications to the existing overhead line structure has not been considered further (Table 25.1 in ES Chapter 25). Do you agree with this approach?	No response	Whilst modifications are required to the existing National Grid overhead line structures, as the line is not changing its geographical location further assessment of the operational impacts of the proposed modifications in accordance with NPS EN-5 (paragraphs 2.9.8 and 2.9.9) were not considered necessary and therefore were not included within the assessment.
13.21	BC	The extension to the existing Necton National Grid substation has not been included as part of the noise modelling presented in ES chapter 25. Do you agree with this approach?	No response	<p>Noise associated with the construction of the National Grid extension works formed part of the assessment of construction impacts assessed in Chapter 25 ES Chapter 25 Noise and Vibration. Operational noise associated with the National Grid extension was not included in the operational noise modelling. This is specifically addressed in section 25.4.1.3.1 of ES Chapter 25, which states:</p> <p><i>"The equipment required to extend the existing Necton National Grid substation for operation does not include components which would contribute any significant noise contributions in the area. Operational noise levels are expected to be minimal as there are no transformers on the site and circuit breakers would be activated only during maintenance (typically every 5 years) or during a system fault. This was discussed as part of Expert Topic Group meetings. The extension to the existing Necton National Grid substation is therefore not included as part of the noise modelling presented within this chapter and this has been agreed with Breckland Council."</i></p>
13.21	Necton Parish Council	The extension to the existing Necton National Grid substation has not been included as part of the noise modelling presented in ES chapter 25. Do you agree with this approach?	Necton Parish Council do not agree that any part of the operational infrastructure can be omitted from the noise modelling. The result of the noise modelling cannot be accepted as accurate if any part of the infrastructure is not included.	<p>Noise associated with the construction of the National Grid extension works formed part of the assessment of construction impacts assessed in Chapter 25 ES Chapter 25 Noise and Vibration. Operational noise associated with the National Grid extension was not included in the operational noise modelling. This is specifically addressed in section 25.4.1.3.1 of ES Chapter 25, which states:</p> <p><i>"The equipment required to extend the existing Necton National Grid substation for operation does not include components which would contribute any</i></p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
				significant noise contributions in the area. Operational noise levels are expected to be minimal as there are no transformers on the site and circuit breakers would be activated only during maintenance (typically every 5 years) or during a system fault. This was discussed as part of Expert Topic Group meetings. The extension to the existing Necton National Grid substation is therefore not included as part of the noise modelling presented within this chapter and this has been agreed with Breckland Council."

1.14 Landscape and Visual Impact

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
14.28	NNDC	Having Regard to the Applicant's post hearing submissions [REP3-003] on the mitigation measures for the impacts of hedgerow removal and proposed replacement measures, do you wish to comment further? (n.b it is not necessary to address the question of the appropriate maintenance period).	<p>NNDC are disappointed that the Applicant considers no replacement trees are to be provided within the NNDC authority area. In respect of replacement planting, it is the expectation of NNDC that where trees are to be removed along the cable route (for example, where removal cannot reasonably be avoided), these should be replaced within reasonable proximity as part of the Provision of Landscaping (DCO Requirement 18) and appropriately managed as part of the Implementation and Maintenance of Landscaping (DCO Requirement 19) for a period of ten years after planting.</p> <p>NNDC would also welcome further clarification as to who will manage and maintain landscape mitigation planting</p>	<p>All trees have been avoided with the exception of those that are present within hedgerows. The Project has committed to reduce the width of the onshore cable route from 45m to 20m at all hedgerow crossings to minimise the length of hedgerows temporarily removed, which will allow for micro-siting to avoid trees where possible. Due to the reduced footprint at hedgerow crossings (20m) and the footprint of the buried cables within that 20m, opportunities to replace any individual trees within the 20m gap, without interfering with the below ground buried infrastructure, are limited. Hedgerows will be reinstated and their ecological functionality will also be reinstated.</p> <p>Whilst individual trees in hedgerows cannot be replaced above the buried infrastructure, the project overall will result in a significant increase in trees, associated with the landscaping works at the substation. Approximately 8ha of trees will be introduced in the onshore project area, thereby offsetting the losses of individual trees at hedgerow crossings where it is not possible to micro-site to avoid them.</p> <p>The responsibilities for managing and maintaining and landscape mitigation planting will be detailed with the Landscaping Management Scheme to be produced post-consent in accordance with the Outline Landscape and Ecological Management Scheme (OLEMS), which is secured through Requirement 18.</p>
14.33	BC	<p>Please could you provide a response to FWQ14.4 in relation to the methodology, baseline data, assumptions, modelling and conclusions of the LVIA.</p> <p>Please confirm that you accept the assessment of potential cumulative impacts.</p> <p>Please comment on the mitigation and management measures set out in the Outline Landscape and Ecological Management Strategy (OLEMS), the Outline Access Management Plan and the Outline Code of Construction Practice.</p> <p>Please identify any outstanding issues.</p>	No response	<p>Breckland Council has provided feedback on these points which is captured within the Statement of Common Ground submitted at Deadline 4 (REP2-SOCG-2.1).</p> <p>In summary, Breckland confirm that they accept the following elements of the Landscape and Visual Impact Assessment (LVIA) and that they have been presented appropriately:</p> <ul style="list-style-type: none"> • Baseline data • Methodologies for construction, operation and decommissioning • Worst case scenario • The photo-visualisations provided • The assessment of cumulative impacts <p>The Applicant and Breckland Council are still in discussion on the following points:</p> <ul style="list-style-type: none"> • Whether long-term effects of construction should be assessed as operational effects • Mitigation timeframes presented in the photo-visualisations <p>Wording of the DCO Requirements</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
14.34	BC	NPS EN-3 makes clear that among other things consent for a development should not be refused solely on the ground of an adverse effect on visual amenity unless an alternative layout within the identified site could be reasonably proposed which would minimise any harm, taking into account other constraints that the Applicant has faced such as ecological effects, while maintaining safety or economic viability of the application. Please clarify what alternative layout within the identified site, as opposed to land outside the Order Limits, you propose if any, in relation to the siting of the substation/additional substation or its component parts	No response received.	Breckland Council has confirmed that they are in agreement with the process of site selection that was undertaken for Norfolk Vanguard. This is set out in the Statement of Common Ground submitted at Deadline 4 (REP2-SOCG-2.1).
14.34	Necton Parish Council	NPS EN-3 makes clear that among other things consent for a development should not be refused solely on the ground of an adverse effect on visual amenity unless an alternative layout within the identified site could be reasonably proposed which would minimise any harm, taking into account other constraints that the Applicant has faced such as ecological effects, while maintaining safety or economic viability of the application. Please clarify what alternative layout within the identified site, as opposed to land outside the Order Limits, you propose if any, in relation to the siting of the substation/additional substation or its component parts	Necton Parish Council asked Vattenfall to consider two alternative sites to the one selected. One was within the 3km 'acceptable circle' and one outside it. The site within the 3km circle is Top Farm. The road to the site chosen for access to the proposed substation site passes through Top Farm, which can potentially accommodate both the converter halls and the National Grid substations. It presents fewer issues as the site contains a significant amount of low ground and there is no contamination from the 1996 plane crash. The current plan for the National Grid substations is to replace one pylon with two pylons to allow connection to the grid network. We believe the Top Farm site would only require the replacement of one pylon with one new pylon so there would be less effect on the visual amenity of Necton both from the lower construction of the converter halls and National Grid substations. The cable route should be shorter so there should be no effect on the overall economic viability of the project. We are not certain whether the Order Limits include the whole Top Farm site but they certainly include some of it because the proposed access road for the proposed substations runs through Top Farm. It is adjacent to the proposed cable corridor route and was already offered to Vattenfall for sale. In addition, the Environmental Statement, Volume 3 Appendix 4.9, on page 24 shows a dash for any effects on tourism. The harm to the nearest luxury holiday let, on St Andrews Lane, would be significant from the proposed National Grid substation activities. This tourist business has already been subjected to significant light and noise pollution from the previous, smaller Dudgeon substations' construction. Vanguard and Boreas will each be larger and their construction will each take longer than Dudgeon. Necton Parish Council's preferred alternative Top Farm site is further away and in a dip so the effects from construction on Necton in general, and in particular on this tourism business, would be minimized.	The two suggested alternatives put forward by Necton Parish Council have been responded to in detail in the Applicant's response to Q2.1 of the Examiner's first written questions submitted at Deadline 1. Neither of these two alternatives are located within the Norfolk Vanguard identified site, i.e. within the Order limits. With regard to holiday lets in proximity to Necton these were named by Necton Parish Council in their response to Q19.22 of the Examiner's first written questions. The Applicant responded in detail in comments on question responses submitted at Deadline 2 (ExA;WQR;10.D2.3).

1.15 Onshore archaeology and cultural heritage

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
15.12	Historic England	Please provide an update on your discussions regarding HE's concerns raised in their letter dated 17 January 2019 in relation to the definition of	We confirm that we received correspondence from the Applicant (email dated 5 th March 2019) regarding proposed text amendment within the draft Development Consent Order, Schedule 1 (authorised project), Part 3	Noted. The Applicant has included the revised drafting in Version 3 of the dDCO submitted at Deadline 4 (document reference 3.1).

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		'commence'.	<p>(requirements), Condition 23 (archaeological written scheme of investigation), such that the text in 23(5) is amend to:</p> <p><i>"Pre-commencement surveys, site preparation works and archaeological investigations must only take place in accordance with a specific written scheme of investigation..."</i></p> <p>We hereby concur with the above text amendment proposed by the Applicant.</p> <p>In reference to the draft Deemed Marine Licences such that within Condition 14(2)4 and 9(2)5 is amended to:</p> <p><i>"Pre-commencement surveys and archaeological investigations and pre-commencement material operations which involve intrusive seabed works must only take place in accordance with a specific written scheme of investigation..."</i></p> <p>We hereby concur with the above text amendment proposed by the Applicant.</p>	
15.13	Historic England	Could you please provide a written response setting out your views with respect to the amended conclusions within the errata document on the impacts on the significance of heritage assets including the Grade I listed Church of St Andrew	Further to our evidence at the Issue Specific Hearing on 5th February 2019 we hereby confirm that the anticipated change introduced by the proposed development would amount to less than substantial harm to the Grade I listed Church of St Andrew.	Noted

1.16 Geology, ground conditions, drainage, pollution and flood risk

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
16.32	NNDC	Please provide an update on your discussions regarding the potential options for Cart Gap sea wall.	<p>NNDC welcomes the Applicant's statement in the SoCG that they are 'open to discussing the feasibility of providing spoil to NNDC post-consent, should NNDC wish to proceed with seeking a licence to infill the Cart Gap seawall'.</p> <p>Given the added potential for re-use of spoil to reduce overall traffic movements, NNDC would be happy to work with the Applicant and relevant land owners to take forward this opportunity. This could be secured within the final DCO either as part of the CoCP (as part of Soil Management, as a Construction Method Statement or as part of the Site and Excavated Waste Management (with a specific new topic covering re-use of clean spoil)) or other relevant documents to be determined between the parties.</p>	The Applicant considers that, should NNDC wish to proceed with seeking a licence to infill the Cart Gap seawall, this would be subject to a separate licence to be initiated by NNDC. This separate licencing would need to consider the potential impacts of the proposal (e.g. associated with traffic movements to deliver material to Cart Gap seawall) as this is not included in the Norfolk Vanguard DCO. It is not appropriate or necessary to secure this matter within either the DCO or the OCoCP because it is not mitigation which the Applicant has proposed or which the Applicant is reliant upon to mitigate impacts of the Project. Further, given it would require NNDC to progress the licence application and related assessments, and that such matters are outside of the Applicant's control, it is not reasonable to secure this in the DCO (or through the OCoCP).
16.33	NCC	Please provide an update on your discussions regarding Norfolk County Council's request that the surface water drainage scheme should be subject to a separate requirement	<p>The County Council has been in discussion with the applicant regarding the potential need for the County Council's standard condition/requirement covering surface water drainage matters being included in the DCO. It has been agreed with the applicant that the outline Code of Construction Practice will be updated to reflect Norfolk County Council's requested wording for flood risk management associated with the operational onshore project substation. For clarity DCO Requirement 20 will also be updated to include specific reference to the onshore project substation operational surface water drainage plan. With these additions, mitigation to manage potential flood risk impacts associated with the operation of the onshore project substation will be adequately secured and the County Council will no longer be seeking a separate Requirement in respect of surface water drainage. Confirmation of the County Council's position will be set out in the updated Statement of Common Ground (SoCG), which will be submitted shortly to the ExA.</p>	<p>As noted in the Applicant's response to Q16.33, The Applicant is happy to accept the wording requested by Norfolk County Council and it was agreed that this wording would be captured within a plan to be secured through the draft DCO requirements. Discussions as to the precise plan and DCO Requirement through which this will be secured are ongoing.</p> <p>This has been agreed in the Statement of Common Ground (SoCG) submitted at Deadline 4 (Rep2 -SoCG -15.1).</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
16.34	EA	Please provide an update on your discussions regarding the storage of spoil within the floodplain	No response	The Applicant is now able to commit to not storing spoil within the functional floodplain, during construction works, as requested by the Environment Agency. The OCoCP will be updated to reflect this updated commitment and will be secured through Requirement 20. This has subsequently been agreed within the updated SoCG between the Applicant and the Environment Agency submitted at Deadline 4 (Rep2 - SOCG - 6.1 version 2)

1.17 Aviation and Radar

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
Not Applicable				

1.18 Land Use and Recreation

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
18.33	NCC	Horizontal Directional Drilling is not proposed at the crossings of two further Norfolk Trails, the Wensum Way and Weaver's Way, nor the majority of the crossing points of the general Public Rights of Way (PRoW) network. Do you agree that the County Council as the Highways Authority should be the relevant local authority to agree the management of PRoW's including the Trails network?	We agree that NCC is the relevant local authority	Noted
18.33	NNDC	Horizontal Directional Drilling is not proposed at the crossings of two further Norfolk Trails, the Wensum Way and Weaver's Way, nor the majority of the crossing points of the general Public Rights of Way (PRoW) network. Do you agree that the County Council as the Highways Authority should be the relevant local authority to agree the management of PRoW's including the Trails network?	Whilst it is of concern that trenchless crossing techniques are not being used to cross the Weavers way near to Aylsham (Blickling Road and Silvergate) given the popularity of this area for tourists in connection with Blickling Hall, this is outside of NNDC's jurisdiction and is therefore a matter for Broadland District Council (BDC). The same applies to any effect on the Wensum Way, which is also in BDC's area. Public Rights of Way (PRoW) are already a function of the County Council and therefore it would make sense that they should be the relevant local authority to agree the management of PRoWs including the trails network. The alternative would be for District LPAs to carry out the function but most LPAs would need to consult the County Council PRoW team for advice in any event. It would therefore cut the bureaucratic burden for the Applicant and likely reduce the potential for delay in discharging requirements if the County Council were the relevant authority.	Noted
18.33	BDC	Horizontal Directional Drilling is not proposed at the crossings of two further Norfolk Trails, the Wensum Way and Weaver's Way, nor the majority of the crossing points of the general Public Rights of Way (PRoW) network.	Part of the Wensum Way is in Broadland District, and it is agreed that Norfolk County Council as the Highway Authority should be the relevant local authority for these works. The Weaver's Way is outside of Broadland area.	Noted

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		Do you agree that the County Council as the Highways Authority should be the relevant local authority to agree the management of PRoW's including the Trails network?		
18.34	NNDC	Are you content with the measures proposed by the Applicant to ensure that the commitment not to use the beach car park is enforced, as outlined in the Applicant's response to ExQ1 11.32 at Deadline 1?	<p>As previously set out by NNDC, the land is owned by NNDC and leased to Happisburgh Parish Council and used as a car park and public open space.</p> <p>As it is understood that Vattenfall are not intending to use the site, issues of enforcement and monitoring would not be applicable.</p> <p>In any event, Requirements 20 and 21 of the draft DCO (referred to by the Applicant in their response to ExQ1 11.32) should provide the mechanism to discourage use by traffic associated with the proposal.</p> <p>Failing this, it may be possible for the Applicant to come to an arrangement with NNDC/Happisburgh PC should the potential use of this car park be considered agreeable to all parties.</p>	Noted.
18.34	Happisburgh Parish Council	Are you content with the measures proposed by the Applicant to ensure that the commitment not to use the beach car park is enforced, as outlined in the Applicant's response to ExQ1 11.32 at Deadline 1?	Happisburgh PC is content with these measures as long as they are included in the DCO and cover the Ramp as well as the Car Park at Beach Road and the said Car Park and ramp are safe from Compulsory Acquisition .	The commitment to not use the beach car park is captured in the OCoCP at section 2.5.2 and secured through Requirement 20. The beach car park and ramp are both outside of the areas subject to the Compulsory Acquisition rights being sought by the Applicant.
18.35	National Farmers Union (NFU) / Land Interest Group (LIG)	A response is awaited to ExAQ1 18.1 to 18.9, and 18.17	<p>18.1 Land Use and Recreation:</p> <p>Further to receiving responses from the Applicant to our submission dated 14th February in regard to the Hearing on the 5th February 2019; the applicant has provided further clarification at 4.1 in regard to how the 150m sections will be reinstated. We understand that this will mean that not all land within the order limits will be permanently out of agricultural operation for the 6 years. But that land around the jointing bays could be out of agricultural operation for 4 years.</p>	<p>The Applicant notes the response provided by the NFU and has arranged a meeting on the 22nd March 2019 to discuss the outstanding concerns as outlined in the SOCG (Rep2 - SOCG - 5.1). This point was addressed in the updated SOCG submitted at Deadline 4, as noted below:</p> <p>Phase 1 and Phase 2 reflect the potential annual subdivisions of the up to 2 year 'cable pull, joint and commission' works at the landfall and the onshore cable route and 'electrical plant installation and commission' works at the onshore project substation, as shown in Table 5.36 of Chapter 5 Project Description of the ES. As noted in Section 5.5.8.5 and 5.5.8.6 the cables and onshore project substation electrical plant would be supplied and installed in up to two phases, in line with up to two phases of offshore development.</p> <p>Works across the onshore project area will occur over a 6 year period, however works in any specific location will be for much shorter periods within that timescale, such that individual agricultural land parcels are unlikely to be taken out of production for this entire duration. Paragraph 134 of Chapter 21 Land Use and Agriculture of the ES notes that "during construction it is unavoidable that land along the onshore cable route would temporarily be taken out of its existing land use, however the embedded mitigation measures reduce the potential impacts as far as practicable."</p> <p>The following section outlines the construction methods and works associated with each element of the 6 year onshore construction programme and outlines how impacts on a single location will be limited to short periods within the overarching 6 year programme.</p> <ul style="list-style-type: none"> - 2 year pre-construction: During this period, works will only be conducted where required and as required based on the types of works as detailed in Section 5.5.8.1 e.g road modifications, hedge cutting, ecological preparations, archaeological preparations and pre construction drainage . Any works at a single location during this period are likely to be completed within short periods of time (in the order of weeks). The 2 year elapsed period for pre-construction allows consideration that some of the works can only be conducted in specific seasons e.g hedge cutting and removal

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				<p>- 2 year duct installation: During this period, excavations to install the ducts will advance from mobilisation areas at a rate of approximately 150m/week including reinstatement of subsoil and topsoil, with exception of the running track and any associated temporary drainage channels. The running track will be retained between the workfront and mobilisation area for access until duct installation for that section (notional duct installation sections are illustrated in Figure 24.07a of Chapter 24 of the ES) is complete. The running track will then be removed and the land reinstated. In some locations, isolated sections of the running track may be left in place to support the cable pulling works (see below) or be reinstated at the time of the cable pulling works.</p> <p>Up to 2 year cable pulling: During this period works will be limited to joint pits (notionally 800m separated) and the temporary access to the joint pits (through reinstatement of short sections of running track and/or construction accesses). As detailed in Section 5.5.2.4.1, any one joint pit could be open for up to 10 weeks per annum.</p>
			<p>18.2 and 18.3: Construction Timings: The NFU/LIG has received more information from the Applicant in response to our submission at page 18 highlighting the different phases of construction but further clarification is still sought on timings to cover when and how the Boreas cables will be pulled through the ducts and what this means to the time that land may be out of production.</p>	<p>The Applicant notes the response provided by the NFU and has arranged a meeting on the 22nd March 2019 to discuss the outstanding concerns as outlined in the SOCG. This point was addressed in the updated SOCG submitted at Deadline 4, as noted below:</p> <ul style="list-style-type: none"> i) The most appropriate reinstatement method and timing will be dependent on the type of field drainage in question, however subsurface drainage will likely be reinstated as part of the subsoil reinstatement process as the 150m section is being completed. ii) Joint bays are likely to be constructed at the time of the cable pulling phase of the works (post duct installation) to maximise the flexibility in their location. With reference to Table 5.33 of Chapter 5 of the ES, a joint bay is a concrete floor of up to 6m x 15m installed at a depth of up to 2m under the ground surface and serves as a stable platform for cable pulling and jointing activities. Joint bays are not required for duct installation activities. iii) Cables will be installed in the two year period post duct installation. If there is a fault on the cables during testing the faulted cable section can be cut and pulled from the duct and a new cable section pulled into the duct and jointed. iv) Norfolk Boreas cables will be pulled through the pre-installed ducts in a subsequent up to two year period after Norfolk Vanguard's up to two year cable pulling period. Joint bays for Norfolk Boreas would be constructed at the time of the Norfolk Boreas cable pulling.
			<p>18.4 Soil Treatment: The NFU/LIG provided the details on soil treatment, reinstatement and aftercare in their submission to the hearing on 5th February 2019. It is essential that this wording is included in a draft Soil Management Plan which is linked to the CoCP within the DCO.</p>	<p>The Applicant notes the response provided by the NFU and has arranged a meeting on the 22nd March 2019 to discuss the outstanding concerns as outlined in the SOCG. This point was addressed in the updated SOCG submitted at Deadline 4, as noted below. Please also refer to the Appendix C and D to the SOCG:</p> <p>The final Soil Management Plan (SMP) will be produced by a competent soil science contractor and agreed with the relevant regulator in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available.</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
				The SMP will include construction method statements for soil handling. The contractor would be required to comply with the SMP.
			18.5 Jointing Bays: The NFU and LIG have received confirmation that all jointing bays will be underground.	Noted.
			18.6 Link Boxes: NFU/LIG have received information on link boxes in the Applicants response to the submission 5th February at 5.0 but there are still concerns over the configuration of the link boxes and that the cabinet design may be used. A request has already been made to Vattenfall that no cabinets are used for link boxes. All link boxes should be manhole covers. All link boxes will pose a hazard to farm machinery during cultivations and harvest. Therefore it is likely that some type of marker posts will be needed at each link box.	The Applicant notes the response provided by the NFU and has arranged a meeting on the 22nd March 2019 to discuss the outstanding concerns as outlined in the SOCG. This point was addressed in the updated SOCG submitted at deadline 4, as noted below: <ul style="list-style-type: none"> i) Discussions on siting of link boxes will take place following a cable contractor being appointed for the project and the design of the cable specifications confirmed, including length of cables, location of joint pits, technical requirements for link boxes, and therefore providing indicative siting of link boxes. ii) The configuration of the link boxes may be discussed with the landowner/occupier on any preferences of configuration once detailed design is completed, within the bounds of practicality and engineering requirements. iii) A cabinet design has been included within the design envelope of the ES and this may be preferential to some landowners.
			18.8 and 18.9 Access Routes: Vattenfall has been in contact with landowner agents and further access routes have been highlighted following locations on plans being highlighted which were physically impossible. We understand that some access routes are still to be confirmed and agreed.	The Applicant notes the response provided by the NFU and has arranged a meeting on the 22nd March to discuss the outstanding concerns as outlined in the SOCG. The Applicant has agreed with LIG and NFU that proposed amendments to operational accesses may be able to be agreed through the property agreements. These are still to be discussed and agreed through the Option Agreements.
			18.17 Growing Seasons: The NFU/LIG do agree with the statement that land out of production could result in the loss of one growing season but due to the timings of the construction it is likely that some land will be out of production for more than one growing season and that multiple cropping could also be affected in one growing season	The Applicant has outlined the programme for the onshore construction works in response to q18.35. As highlighted in the response, the Applicant will seek to minimise disruption, crop damage and to reduce the time that land is out of production.
18.37	Necton Council Parish	Do you agree with the reply that the Applicant gave to WQ18.21 [REP1- 007]? If not please comment further	The applicant has identified a number of additional items that have not been included in their assessment of agricultural land loss e.g. mitigation planting, roadways, etc. and states they are not significant. Since the loss of agricultural land is an important issue for the United Kingdom, we request that the applicant be asked to provide a more accurate assessment of the actual land loss.	The Applicant responded to Q18.21 providing details of the land take associated with the installed infrastructure associated with the onshore project substation and National Grid extension works (10.5ha). Taking into account the new permanent access road and the introduction of mitigation woodland planting the total area of agricultural land that will be taken out of agricultural production, associated with the operation of the onshore project substation, and National Grid Extension would be approximately 19.25ha (48 acres). <ul style="list-style-type: none"> • The permanent new access road is approximately 0.75ha • The woodland planting is approximately 8ha • The onshore project substation is approximately 7.5ha • The National Grid Extension is approximately 3ha. As set out in the Applicant's response to Q18.21, this remains below 20ha (above 20ha would denote a high magnitude effect) and the overall impact is assessed as not-significant.
18.38	BC	With reference to your SoCG [REP1-037] with the Applicant please provide an update as to whether you maintain an objection, and if so why, to the Applicant's position set out in Table 7 (land use and	No response	The Applicant and Breckland Council are still discussing these issues, which is captured within the Statement of Common Ground submitted at Deadline 4 (REP2-SOCG-2.1).

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		agriculture) on the assessment methodology, findings and approach to mitigation		

1.19 Socio-economics including tourism

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
19.29	NCC	<p>In the Applicant's response to NCC's LIR [REP2-005] you state that the decision to establish a Community Benefit Fund (CBF) would be made post Financial Investment Decision (FID) and the potential for a CBF is outwith the DCO consenting regime and therefore wider community benefits should not be taken into account when determining the application.</p> <p>If a development plan policy relating to the provision of a community benefit appears to you to be relevant to development proposed within the Order limits what is your view as to the applicability of the policy in light of the DCO consenting regime? Please list any such policies.</p>	<p>The County Council supports the need for a Community Benefit Fund (CBF) and has welcomed the applicant's commitment towards establishing such a fund (see paragraph 4.21 of the County Council's Local Impact Report). The County Council does not have any relevant Development Plan policies covering such matters as its policies and statutory functions, in respect of planning, simply relate to minerals and waste planning. Notwithstanding the above comments, the County Council would welcome a "Requirement" covering the provision of a CBF as it could be argued that such as a "Requirement" would meet / satisfy the tests set out in paragraph 55 of the NPPF(2019) in terms of:</p> <ul style="list-style-type: none"> a. Necessary – given the scale of the proposed onshore works and those communities directly affected by the proposal both during and after construction; b. Relevant to planning and to the development to be permitted – appropriate mitigation and wider communities benefits will be needed to overcome any inconvenience to local communities (both individual households and businesses); <p>The County Council would be willing to work with the applicant to ensure that such a requirement would be enforceable, precise; and reasonable in all other respects. However, in the event that such a "requirement" is not deemed appropriate / deliverable, the County Council would welcome an explanation / reassurance from the applicant on how such as Fund may be practically secured outside the DCO process (e.g. through some form of memorandum of understanding etc).</p>	<p>The Applicant notes that any requirements should adhere to the tests set out in paragraph 55 of the National Planning Policy Framework (NPPF) (2019), and in accordance with NCC's own appraisal there are no relevant Development Plan Policies requiring the provision of a Community Benefit Fund.</p> <p>The Applicant maintains that a Community Benefit Fund or equivalent, is not a material planning condition, as it does not deliver mitigation in relation to specific project impacts and therefore it is not a relevant consideration of the DCO process.</p> <p>The Applicant also wishes to clarify that they are planning to convene a forum for local dialogue outwith the DCO process. This local, participatory dialogue would aim to encourage exploration of a long term, sustainable and positive future for communities closest to the proposed onshore project substation and National Grid extension works. An aim and outcome of the process would be a locally co-designed vision, describing the potential for appropriate local development, consistent with resilient, climate smarter community living, which could be realised with strategic investment, including from the Applicant.</p> <p>The Applicant has not committed nor determined to establish a conventional Community Benefit Fund.</p>
19.29	NNDC	<p>In the Applicant's response to NCC's LIR [REP2-005] you state that the decision to establish a Community Benefit Fund (CBF) would be made post Financial Investment Decision (FID) and the potential for a CBF is outwith the DCO consenting regime and therefore wider community benefits should not be taken into account when determining the application.</p> <p>If a development plan policy relating to the provision of a community benefit appears to you to be relevant to development proposed within the Order limits what is your view as to the applicability of the policy in light of the DCO consenting regime? Please list any such policies.</p>	<p>Policy EN7 of the NNDC Core Strategy is the relevant development plan policy. It provides:</p> <p><i>"Large scale renewable energy proposals should deliver economic, social, environmental or community benefits that are directly related to the proposed development and are of reasonable scale and kind to the local area."</i></p> <p>The reasoned justification §3.3.37 addresses the potential for offshore wind development to provide community benefits. It refers to one of the foundational documents dealing with community benefits (Delivering Community Benefits from Wind Energy Development', a report for the Renewables Advisory Board and DTI, May 2007), which was the relevant document when the Core Strategy was drafted. North Norfolk District Council have assumed that development plan policies carry some, albeit limited weight in the NSIP decision making process forming a material planning consideration, the weight to be applied being a matter for the decision maker.</p> <p>As an NSIP proposal where National Policy Statement has effect (relevant NPS includes EN-1, EN-3 and EN-5), Part 6, Chapter 5 Section 104(2) of the Planning Act 2008 sets out what the Secretary of State must have regard to in deciding the application. This includes, inter alia, (a) the relevant NPS, (b) any local</p>	<p>The SoCG with NNDC as submitted at Deadline 4 (Rep2 - SOCG - 17.1) reflects the current position in relation to the assessment of effects for construction, operation and decommissioning of the Project on tourism, with both the Applicant and NNDC agreeing that with the inclusion of the mitigation described in the ES, impacts on tourism, recreation and socio-economics are likely to be non-significant in EIA terms.</p> <p>Notwithstanding this, NNDC states that impacts <i>"...on the tourism economy is one area where a Community Benefit Fund may need to be secured within the DCO and where it may be considered by the ExA and Secretary of State to be both important and relevant to ensure that such impacts, particularly at construction phase, are properly managed and/or mitigated."</i> However, NNDC does not offer any explanation as to the nature of such a community benefit fund sought or any detail as to the specific matters it would seek to address in order to enable the Secretary of State to conclude that it would be both relevant and important.</p> <p>In contrast, the Applicant maintains that a Community Benefit Fund or equivalent, is not relevant to the Secretary of State's decision, as it does not deliver mitigation in relation to specific project impacts and therefore it should not be taken into account under Section 104(2)(d) of the Planning Act 2008.</p> <p>It should be noted that the Overarching National Policy Statement for Energy (EN-1) does not contain any reference which supports the provision of community</p>

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			<p>impact report and (d) any other matters which the Secretary of State thinks are both important and relevant to the Secretary of State's decision.</p> <p>NNDC has set out its position on matters affecting North Norfolk in the Local Impact Report submitted at Deadline 1 and through subsequent oral submissions at relevant Issue Specific Hearings and through further submissions at Deadline 3. The most recent iteration of the SoCG to be submitted at Deadline 4 highlights those areas where further discussion is required with the Applicant to clarify matters including one area of disagreement in relation to impacts on the tourism economy in North Norfolk.</p> <p>Impact on the tourism economy is one area where a Community Benefit Fund may need to be secured within the DCO and where it may be considered by the ExA and Secretary of State to be both important and relevant to ensure that such impacts, particularly at construction phase, are properly managed and/or mitigated. This is so given that it is NNDC's position that there is still the potential for adverse impacts on the tourism economy despite the controls proposed to be put in place through various DCO requirements. Accordingly, in the language of policy EN7, such a Community Benefit Fund would be "directly related to the proposed development".</p> <p>If the Secretary of State considers it both important and relevant that a Community Benefit Fund is secured as part of the proposal, then he is perfectly entitled to take that into account, whether or not the matters relate back to a development plan policy. This is the flexibility given by section 104(2)(d) of the 2008 Act.</p> <p>If the ExA is considering making a CBF part of the Development Consent Order, it will be important for all parties to understand the basis for this conclusion as it will frame the terms of reference and extent of any CBF to be secured within the Development Consent Order. It is possible that a CBF addressing specific impacts could be secured through the DCO while a more general CBF could be negotiated outside of the DCO process.</p> <p>North Norfolk District Council have assumed, based on other recent DCOs, that discussions regarding any CBF (other than those matters designed to address direct impacts of the proposal) would be undertaken outwith the NSIP process. Further clarification setting out the ExA position on this matter would be of assistance.</p> <p>NNDC will look to commence a dialogue with Vattenfall as soon as reasonably practicable outside of the DCO process on a range of Community Benefits it wishes to secure.</p>	<p>benefit funds from energy related infrastructure. It does however adopt the usual planning tests in the consideration of whether requirements or development consent obligations should be imposed. Paragraphs 4.1.7 and 4.1.8 state:</p> <p><i>"4.1.7 The IPC should only impose requirements in relation to a development consent that are necessary, relevant to planning, relevant to the development to be consented, enforceable, precise, and reasonable in all other respects. The IPC should take into account the guidance in Circular 11/95, as revised, on "The Use of Conditions in Planning Permissions" or any successor to it.</i></p> <p><i>4.1.8 The IPC may take into account any development consent obligations that an applicant agrees with local authorities. These must be relevant to planning, necessary to make the proposed development acceptable in planning terms, directly related to the proposed development, fairly and reasonably related in scale and kind to the proposed development, and reasonable in all other respects."</i></p> <p>The July 2009 edition of 'Delivering community benefits from wind energy development: A Toolkit, A report for the Renewables Advisory Board' (the 2007 version of which is referred to in the reasoned justification of NNDC policy EN7) notes that community benefits funds, such as those explored in the Toolkit, are generally considered to be not relevant to the decision on granting planning permission. Section 4 states:</p> <p><i>"There is a strict principle in the planning systems in all parts of the UK that a decision about a particular planning proposal should be based on planning issues; it should not be influenced by additional payments or contributions offered by a developer which are not linked to making the proposal acceptable in planning terms.</i></p> <p><i>Current planning legislation also prevents local planning authorities from specifically seeking developer contributions where they are not considered necessary to make the proposal acceptable in planning terms. This is to ensure that unacceptable development is never permitted because of unrelated benefits being offered by the applicant. To put it simply, planning permission cannot be 'bought'.</i></p> <p><i>This approach means that community benefits, such as those explored in this Toolkit, are generally considered to be <u>not</u> relevant to the decision on granting planning permission."</i></p> <p>This is also supported in the case of R (oao Wright) v. Forest of Dean District Council [2017] EWCA Civ 2102, where planning permission for the grant of an onshore community wind farm was quashed where community benefits were given weight as material planning considerations.</p> <p>It should also be noted that the Toolkit referred to by NNDC is primarily concerned with onshore wind farm development. Section 1 of the Toolkit considers the applicability of the Toolkit to offshore wind and states:</p> <p><i>"While this Toolkit is focused on community benefits from on-shore wind energy developments, many of its approaches can potentially be applied to off-shore wind energy projects. However, there are some key differences between on- and off-shore which need to be taken into account:</i></p> <ul style="list-style-type: none"> <i>• The costs of off-shore development are much higher than on-shore developments, which has a significant impact on the financial resources that could potentially be available for community benefits</i> <i>• The definition of 'host community' is rather more complicated for off-shore projects; their impact on specific coastal communities may be less clear and the most significant impacts may be more related to the landfall of the grid connection which may be some way from the wind farm"</i>

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				<p>The Applicant maintains there will not be long-term tangible change experienced by communities living in North Norfolk as a result of the construction, operation and decommissioning of the project: the commitment to undergrounding cables and deployment of innovative High Voltage Direct Current (HVDC) technology has both eliminated the need for permanent above ground infrastructure in North Norfolk, and reduced the cable corridor width and associated construction disruption.</p> <p>Notwithstanding this, separately and outside of the DCO process, the Applicant is committed to exploring options for delivering a provision for communities, with the aim of recognising hosts and accounting for change, where benefits acknowledge and address tangible local change.</p>

1.20 Content of the draft DCO

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
20.120	BC	You have suggested [REP3-03] that Requirements be imposed in the DCO relating to the assessment/remediation of contamination at the site of the plane crash near Necton. Please supply wording for the Requirement(s).	No response.	N/A.
20.122	MMO	Considering the Applicant's response at [REP3-005] to the question whether total disposal volumes could be broken down into different disposal activities, and the number of cable crossings to be stated in the Deemed Marine Licence (DML), do you maintain that further changes are required to the dDCO?	<p>The MMO does maintain that further changes are required within the dDCO.</p> <p>Disposal activities – the MMO understand that the applicant does not have any further details to break down the figures further at this stage.</p> <p>The MMO agrees that the relocation of boulders should not be treated as a disposal activity where the boulders were not brought to the surface prior to relocation. However, if this is to be the case then the applicant is limited to techniques which do not classify as disposal. If this changes following consent then a new marine licence for disposal will be required.</p> <p>Cable crossings - The MMO requests all licensed activities should be limited to the maximum parameters assessed within the ES, and these should be clearly defined on the DMLs. This is to ensure proper scrutiny and ensures accountable, transparent and public due process is applied. This approach is consistent with the process that is followed for standard marine licences granted by MMO.</p> <p>The MMO understand the applicant has included the cable crossings in the total cable protection within the dDCOV2. The MMO do not feel that this is detailed enough to be able to adhere with comment 2.1. The specifics relating to the deployment of cable protection is an important factor and this needs to be acknowledged in the licence. If the applicant does not propose to exceed any of the maximum parameters assessed in the ES, this will result in no additional burden for the applicant from the inclusion of these parameters on the face of the DMLs, whilst providing greater clarity on what is permitted in order for the MMO to ensure compliance.</p>	<p>Disposal activities and relocation of boulders:</p> <p>The Applicant notes the MMO's response and welcomes the MMO's agreement in relation to the breakdown of disposal volumes and relocation of boulders. The Applicant also refers the MMO to the Applicant's response to Q.20.146 at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6) for further information.</p> <p>Cable Crossings:</p> <p>As the Applicant notes in response to Q.20.71 at Deadline 1 (document reference: ExA; WQ; 10.D1.3), it is not considered necessary to include a maximum number of cable crossings in the DMLs. The cable protection figures are the salient measures in this respect. The figures for cable protection have been based on the parameters assessed in the ES. Whilst the Applicant does not intend to exceed the maximum parameters assessed in the ES, the Applicant has used available data to estimate the number of cable crossings, and there is potential for historic cables to be unregistered. Therefore, if crossings can be achieved using cable protection up to the maximum area and volume included in the DCO then these should be permissible.</p> <p>Accordingly, flexibility is sought within the parameters assessed (i.e. maximum cable protection figures) to confirm the maximum number of cable crossings at the pre-commencement stage once this further detail is known and can be confirmed. The Applicant considers that the level of detail regarding the precise number of cable crossings would be agreed as part of the scour protection and cable protection plan (Condition 14(1)(e) of the Generation DMLs and Condition 9(1)(e) of the Transmission DMLs).</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
			If the applicant does wish to undertake activities that are out with the maximum parameters assessed and considered under the original licence, the appropriate process for dealing with this would be through a request to vary the DML, whereby the MMO can evaluate whether the proposed changes can be permitted.	Notwithstanding the Applicant's view above, the Applicant considers that it may be appropriate to define the maximum number of cable crossings for the HHW SAC given its status as a European site. This detail could be stated in the proposed outline Norfolk Vanguard Haisborough, Hammond and Winterton Special Area of Conservation Site Integrity Plan, which is to be secured pursuant to Condition 9(1)(m) of the Transmission DMLs. This condition has been included in the revised draft DCO (version 3) submitted at Deadline 4 (document reference: 3.1).
20.124	NNDC	In light of the Applicant's stance at the ISH3 regarding Article 11 [REP3-005] and the temporary stopping up of streets, that it would not be possible to provide an exhaustive list of what might be included in a temporary working site and that this should be given its plain meaning, please confirm whether you are content with that approach and if not why not.	North Norfolk District Council would defer to the advice of Norfolk County Council as Highway Authority on this matter. However, NNDC would welcome early engagement on proposed activities, duration of works and mitigation measures so as to avoid the potential for any adverse impacts.	Detailed method statements for the works, including proposed activities, duration of the works and mitigation measures will form part of the final Code of Construction Practice (COCP). No stage of the onshore transmission works may commence until for that stage a COCP has been submitted to and approved by the relevant planning authority, in consultation with Norfolk County Council and the Environment Agency. This is secured through Requirement 20. For works taking place in NNDC's area, NNDC will be the relevant planning authority and the Applicant will work with NNDC in developing that COCP.
20.127	NCC	How, if at all, would you propose to amend Requirement 16(7) of the dDCO to secure that the Traffic Management Plan allows for trenchless installation techniques to be used in other locations than those specified?	The view of the LHA is the list within R16 needs to be expanded to bring it in line with the Outline Traffic Management Plan and to capture outstanding commitments. Accordingly, we recommend an additional item be added to the list under R16(17) as follows: - (t) roads so indicated within the traffic management plan.	The Applicant does not think it is appropriate to include this wording within a Requirement for the reasons outlined in response to Q.11.38 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6).
20.131	NNDC	Please consider and comment on the response of the Applicant in ISH3 [REP3-005] as to construction hours set out in R26 and inform the ExA of any further concerns and consequential proposed amendments to R26.	In respect of HGV deliveries/arrivals, there needs to be a clear procedure in the eventuality of missed booking slots so that HGVs do not wait near to noise sensitive receptors. NNDC would welcome early engagement on proposed activities and mitigation measures so as to avoid the potential for any adverse impacts, with particular reference to daily start up and shut down activities - Requirement 26 (2)(h).	The Applicant has provided detail relating to control measures for HGV deliveries in response to Q12.15 of the Examiner's second written questions submitted at Deadline 4. The Applicant has provided detail relating to start up and shut down in response to Q13.14 of the Examiner's second written questions submitted at Deadline 4. In summary, daily start up and shut down would include non-intrusive activities which are focused around maintaining good site management. Such activities would include site inspections, safety checks, briefings and housekeeping which does not require the use of plant or machinery. These activities will be conducted prior to and post daily construction works to maximise the works which can be completed during construction hours. For clarity the Applicant will specify these start up and shut down activities in an amended OCoCP.
20.131	BDC	Please consider and comment on the response of the Applicant in ISH3 [REP3-005] as to construction hours set out in R26 and inform the ExA of any further concerns and consequential proposed amendments to R26.	No comment, see response to 20.132 below.	No response
20.132	NNDC	What is understood by the term "non-intrusive" and is it intended to exclude activities that would have some limited but adverse impact? Is there merit in separating out the "essential" and "non-intrusive" activities in R26?	NNDC consider that this matters does need to be clarified, particularly as the term 'intrusive' could be interpreted as: <ul style="list-style-type: none"> • either physical construction works; or • having and adverse impact on noise sensitive receptors Further clarification is required on what is considered to be 'essential' and 'non-intrusive' so that there is certainty in any final DCO decision.	Noted. The Applicant has revised the drafting of Requirement 26 and the Applicant refers NNDC to the Applicant's response to Q.20.132 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6).
20.132	BDC	What is understood by the term "non-intrusive" and is it intended to exclude activities that would have some limited but adverse impact? Is there merit in separating out the "essential" and "non-intrusive" activities in R26?	Non-intrusive activities would be those activities that are quiet and don't disturb local residents. There is considered to be merit in specifying the activities that would be considered as essential and non-intrusive activities to avoid misunderstanding once works begin.	Noted. The Applicant has revised the drafting of Requirement 26 and the Applicant refers Broadland District Council to the Applicant's response to Q.20.132 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6).
20.132	BC	What is understood by the term "non-intrusive" and	No response	N/A

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		is it intended to exclude activities that would have some limited but adverse impact? Is there merit in separating out the "essential" and "non-intrusive" activities in R26?		
20.132	NNDC	What is understood by the term "non-intrusive" and is it intended to exclude activities that would have some limited but adverse impact? Is there merit in separating out the "essential" and "non-intrusive" activities in R26?	NNDC consider that this matters does need to be clarified, particularly as the term 'intrusive' could be interpreted as: <ul style="list-style-type: none"> • either physical construction works; or • having and adverse impact on noise sensitive receptors Further clarification is required on what is considered to be 'essential' and 'non-intrusive' so that there is certainty in any final DCO decision.	Noted. The Applicant has revised the drafting of Requirement 26 and the Applicant refers NNDC to the Applicant's response to Q.20.132 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6).
20.133	NCC	Have you considered, following ISH3, alternatives to the wording of R26(2) and if so please provide any alternative wording proposed?	NNDC would be happy to consider alternative wording once the issues identified above are clarified by the Applicant in respect of Questions 20.131, 20.132 and 10.5.	Noted. The Applicant has provided revised wording to Requirement 26 within the dDCO submitted at Deadline 4 (document reference: 3.1 (version 3)). The Applicant refers NNDC to the Applicant's response to Q.10.5 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6) for further information.
20.133	NNDC	Have you considered, following ISH3, alternatives to the wording of R26(2) and if so please provide any alternative wording proposed?	NNDC would be happy to consider alternative wording once the issues identified above are clarified by the Applicant in respect of Questions 20.131, 20.132 and 10.5.	Noted. The Applicant has provided revised wording to Requirement 26 within the dDCO submitted at Deadline 4 (document reference: 3.1 (version 3)). The Applicant refers NNDC to the Applicant's response to Q.10.5 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6) for further information.
20.137	MMO	In relation to the transfer of benefit of the DMLs please comment on the Applicant's response in ISH3 to the issue of whether co-operation should be the subject of a condition in the DMLs, on the assumption that the approach to co-operation will deal with confidential or sensitive commercial arrangements between the parties.	The MMO understands that cooperation during transfer of benefit would be in both operators' interests to ensure that there is a clear set of principles outlined between the parties. However, as described these are commercial agreements and not subject to any regulatory oversight. As these transfers would move licenced activities from one undertaker to another, there could be further consequences not considered within the commercial aspects. For example impacts to ongoing monitoring or ongoing agreed mitigation plans.	The Applicant would refer the MMO back to its previous response to Q20.68 submitted at Deadline 1 (document reference ExA; WQ; 10.D1.3) and Q.20.138 submitted at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6). It is worth noting that any transferee will be bound by the requirements and conditions (including any monitoring conditions in the DMLs) within the DCO. The Applicant considers that there are currently adequate safeguards for the MMO; it would not be appropriate or necessary to include a further condition within the DMLs to this end. The Applicant considers that the precise detail of any transfer is best dealt with through commercial arrangements at the point of transfer of benefit, especially given that the nature and extent of any co-operation required is not yet known.
20.141	Network Rail	Please specify in detail what are the outstanding matters concerning <ol style="list-style-type: none"> 1. protective provisions for the benefit of Network Rail and 2. property and asset protection agreements that remain in dispute, with a commentary that enables the ExA to understand exactly what is at issue here. Please refer in the commentary, in particular to paragraphs 2.9, 2.10 and 2.11 of your previous representations in [REP1-063].	1. Protective provisions for the benefit of Network Rail While progress has been made with the Applicant in relation to some of the protective provisions to be included in Part 5 of Schedule 16 to the Development Consent Order (Order) since the submission of Network Rail's Written Representations [REP1-063], several points of difference remain. Network Rail and the Applicant are continuing to discuss these points of difference and Network Rail is hopeful that all matters can be resolved before 28 March, the date reserved for the ISH into the draft Order. We list below the key issues to be resolved between the parties. This not an exhaustive list as we do not include the more minor points of difference and Network Rail will update the ExA as necessary with a full list in advance of ISH5 if these remain unresolved. i) Paragraph 51 - this provision requires the Applicant to obtain consent from Network Rail before exercising a number of powers under the Order in relation to Network Rail, including the exercise of compulsory purchase powers in respect of Network Rail property. Network Rail cannot agree to protective provisions that allow the Applicant to exercise Order powers in respect of Network Rail land without Network Rail's consent. We therefore require that the full list of Order powers that may affect Network Rail property be included. This list is included in	1. The Applicant notes Network Rail's response and the Applicant is considering these comments, together with the latest draft of the Protective Provisions, further. The Applicant will continue to engage in discussions with Network Rail and the Applicant expects to resolve any differences before the close of the examination. 2. The Applicant notes and agrees with Network Rail's comments in relation to the Property Agreements. With regards to electro-magnetic interference (EMI), as is required by paragraph 58 of the (draft) Protective Provisions, the Applicant will take measures reasonably necessary to prevent EMI in relation to Network Rail's apparatus. The Applicant therefore considers that the current design of the project, including the requirement to use trenchless installation techniques under the Norwich to Cromer Railway Line (Requirement 16(17)(o)), together with the measures contained in the protective provisions will provide the necessary safeguards for Network Rail.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
			<p>the protective provisions at Appendix 1 to Network Rail's Written Representations [REP1-063].</p> <p>ii) Paragraphs 53(2) and 56(3) - in relation to the matters for which Network Rail shall be compensated, Network Rail must be compensated for all losses arising from the construction of the specified works, without qualification. Where Network Rail is able to control costs, such as Network Rail's own expenses, Network Rail agrees that such costs should be "reasonably" incurred. This is reflected in Network Rail's protective provisions. However, where losses arise from the Applicant's development, Network Rail, as a public body, must recover any losses in full.</p> <p>iii) Paragraph 62(3) - similarly, Network Rail cannot be liable for any loss or loss of profits arising from the construction or use of the authorised development and Network Rail requires this paragraph to be amended, as set out in Appendix 1 to the Written Representations [REP1-063].</p> <p>iv) Arbitration - Network Rail has proposed to the Applicant that some new wording be included in the protective provisions, regarding an arbitration timetable, to ensure that in the event of a dispute being referred to arbitration, any timetable agreed between the parties or set by the arbitrator will take into account Network Rail's clearance process, and other engineering, regulatory and stakeholder consents, including NR governance procedures, which may need to be sought by Network Rail during the course of the arbitration.</p> <p>2. Property and asset protection agreements</p> <p>Negotiations with the Applicant are ongoing with regards to the other documents referred to in paragraph 2.9 of Network Rail's Written Representations [REP1-063], namely the draft easement, the framework agreement and the asset protection agreements. Network Rail anticipates that these documents will be progressed significantly over the coming weeks and we will update the ExA with regards to these negotiations at the next appropriate Deadline.</p> <p>The final matter referred to in Network Rail's Written Representations requiring further consideration relates to the potential for electro-magnetic interference to be emitted from the authorised development (paragraph 2.11 of REP1-063). Network Rail is assessing whether there is an impact for Network Rail in this regard and hopes to have the results of this assessment in advance of ISH5.</p>	
20.142	Cadent Gas	Please provide an update as to whether the position regarding insurance and surety provisions affecting Cadent Gas and as referred to in their D3 submissions [REP3-040] has now been agreed and if not explain the nature of any outstanding dispute.	<p>Cadent have agreed the insurance/surety/indemnity issues with the Promoter now. Cadent are seeking to agree a final version of the Protective Provisions with the Promoter. The recent history of matters is that updated Protective Provisions were returned to the Promoter on the 7th January 2019.</p> <p>Final Neat versions of the Protective Provisions were sent by SHMA on the 3rd of March, reflecting those sent on the 7th January 2019, seeking confirmation that they were agreed. On the 12th March, the promoter's solicitors raised a number of new points on behalf of the Promoter. On the 12th March, SHMA confirm the position in respect of those points Cadent could and couldn't agree. We hope and anticipate that the Protective Provisions are now agreed. However we haven't had Promoters approval to this. Accordingly it is difficult for us to update ExA as to the issue in dispute, if any, because we do not currently know what they are or whether the documents are now finally agreed.</p>	The Applicant can now confirm that this matter is resolved and the protective provisions are agreed. An updated SoCG has been submitted at Deadline 5 (document reference Rep2-SOCC-10.1).
20.143	National Grid	Please specify precisely what wording of the Protective Provisions as they apply to you, and are set out in Schedule 16, Part 2, remain in dispute, with a	No response	N/A

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
		commentary that enables the ExA to understand exactly what is at issue here. Please refer in the commentary to the issues generally highlighted in Table 2 of the Statement of Common Ground [REP1-048]		
20.147	NE	Please supply wording as to the requested changes to Schedule 1, Part 1.	Natural England will work with the MMO to consider this further. One example would be the MMO's condition applied to aggregates industry which specifies that the removed sediment particle size needs to be >95% similar to the disposal location. The scale of impacts to HHW SAC including volume, lengths and areas need to be more explicit in the DCO/DML.	The Applicant does not consider that a condition comparable to that applied to the aggregates industry would be appropriate or proportionate as this relates to dredging of sediment to be used in a different location. For Norfolk Vanguard, the Applicant has committed to disposing of sediment arising from the HHW SAC back into the SAC to ensure that there is no net loss of sediment from the SAC system. As the Applicant outlines in response to Q20.146 at Deadline 4 (document reference: ExA; FurtherWQ; 10.D4.6), the Applicant considers that there is benefit in securing mitigation associated with the HHW SAC in a single plan and through a separate condition in the transmission asset DMLs. The Applicant has included this condition at Condition 9(1)(m) of the Transmission DMLs of the dDCO submitted at Deadline 4. The Applicant therefore considers that the details within this condition and the associated plan will provide more certainty for Natural England in relation to the scale of impacts to the HHW SAC.
20.153	NCC	You have recommended two requirements concerning archaeological investigation as set out in paragraph 1.11 of your Additional Submission - Accepted at the discretion of the Examining Authority and published on 4 February 2019. [A document reference has been requested] Please consider how this interacts with R23 as currently drafted and provide any proposed amendments to R23.	No response.	N/A.
20.157	NFFO	Please provide an update as to discussions and any changes agreed to Condition 20(2) and Condition 9(9) and 9(11) which relate to the monitoring of cables and notification of exposed cables.	No response submitted at Deadline 4.	No response required.

1.21 Monitoring, mitigation and management plans

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
Not Applicable				

1.22 Compulsory Acquisition

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
22.47	NFU/LIG	Are you satisfied that it has been shown how exactly construction of the different cables will take place at the crossing point, with the Orsted development in two phases and the Vanguard and Boreas proposed developments? Please provide reference to submitted documents as appropriate.	The NFU/LIG are not satisfied with the information that has been provided on how the construction at the Crossing Point will take place. There is concern that the highest cables to ground level must still be at a minimum depth of 1.2m.	The Applicant has submitted a SoCG with Orsted Hornsea Project Three (UK) Ltd (Rep1 – SOCG – 18.1). The document notes that as part of the co-operation agreement, the parties will agree a mechanism to determine the method and design at the point of crossing, incorporating the principle that one project would install using open cut, and one through Horizontal Directional Drilling (HDD). The SoCG also notes that with respect to the co-operation agreement “both parties will design the cable installation works so as to ensure that the other parties can still install their cables – for example, if the first project installs the cables by way of open cut trench, that section of trenching will include enhanced thermal conductivity backfill to reduce any potential future thermal interactions with the second project.” Furthermore, “parties will share design specifications when known to help facilitate the design of the other party’s cables at the point of crossing”. The Applicant confirms that the highest cables to ground (for either project) will be at a minimum depth of 1.05m.
22.47	NCC	Are you satisfied that it has been shown how exactly construction of the different cables will take place at the crossing point, with the Orsted development in two phases and the Vanguard and Boreas proposed developments? Please provide reference to submitted documents as appropriate	No response	No response
22.47	NNDC	Are you satisfied that it has been shown how exactly construction of the different cables will take place at the crossing point, with the Orsted development in two phases and the Vanguard and Boreas proposed developments? Please provide reference to submitted documents as appropriate	The Crossing point of the Norfolk Vanguard/Norfolk Boreas and Ørsted Hornsea Project Three schemes is outside of NNDC’s area and is therefore a matter for comment by Broadland District Council and other relevant parties.	Noted
22.48	NFU	Please set out briefly your remaining concerns as to the funding for the development.	NFU/LIG raised concerns in regard to funding at the hearing on 5th February as to how funding the development would take place. In initial discussions with Vattenfall they could fund the development and that it was not subject to CFDs. But further to the hearing we now understand that the applicant will be applying for CFDs and so further clarification is sought on this.	As set out in the SoCG with the NFU, the details on funding are set out in the Funding Statement (Document Reference 4.2). The UK Government intends to hold a Contract for Difference (CfD) auction in May 2019 and in the Offshore Wind Sector Deal published in March 2019, UK Government reconfirmed its intention to hold offshore wind CfD auctions ‘every two years’ (i.e. assumed to be 2021 and 2023). It is Norfolk Vanguard LTD’s intention to bid for a CfD at the earliest opportunity following a successful DCO consent decision. A successful CfD award will enable Vattenfall to progress future investment decisions that will realise the construction onshore and offshore and subsequent commissioning of the Norfolk Vanguard windfarm. Vattenfall and Norfolk Vanguard LTD has confidence that we will be successful in this CfD process as an industry leader
22.48	LIG	Please set out briefly your remaining concerns as to the funding for the development.	As above.	As above.
22.50	National Trust	Please list the outstanding topics that are currently under discussion between the parties. Please provide a brief summary of the parties’ position on each topic, or otherwise indicate where the only outstanding issue on a particular topic pertains to commercially confidential matters.	Compulsory Acquisition of Inalienable Land Heads of terms are under discussion in relation to an option agreement for a deed of easement. There are no major outstanding points so far as this aspect of the heads of terms are concerned. Discussions continue on some detailed points, notably about the extent to which the National Trust would agree not to object to future applications relating to Vanguard and Boreas, but these should be capable of resolution. However, the National Trust has not yet been provided with a draft of the	The Applicant notes the responses that have been received and is in ongoing discussions over the final outstanding points with the National Trust and anticipates concluding Heads of Terms (HoTs). The Applicant expects to resolve any differences before the close of the examination. The Applicant has issued the draft Option Agreement documentation to the land agent acting for the National Trust.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
			<p>detailed option agreement, so it is unable to make any comment on that and may The applicants notes the responses that have been received and is in ongoing discussions over the final outstanding points with the National Trust with the hope of concluding Heads of Terms (HoTs) within the coming days.</p> <p>Archaeology The heads of terms referred to above contain provisions about archaeology, and in particular the way in which archaeological finds will be treated and information about them provided. The heads of terms are not yet agreed in this aspect, in particular about the way in which information and objects are made available to the National Trust and displayed to the public. The Trust has a special role to play in this regard in terms of its functions, which distinguish it from ordinary landowners. As mentioned above, the detailed draft option agreement has not yet been provided, so the National Trust is unable to comment further and may have further points when it is.</p> <p>Road closures The heads of terms in relation to this aspect are agreed, but again the National Trust reserves its position until it has seen and agreed the detailed agreement.</p>	

1.23 Habitats Regulation Assessment

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
23.66	NE	Can you confirm whether the use of mean density values is advocated in any particular guidance?	<p>A worked example for the Band (2012) model is available online. In this the example uses boat-based survey data for an offshore wind farm (OWF), where two years of surveys were undertaken with two survey per month. The example shows that for each month a mean and standard deviation are calculated from all surveys undertaken within that month (and across both years of survey). The collision risk model evaluates risk on a month by month basis across the year in order to reflect changing bird abundance within and utilisation of the area. Therefore, it has become standard practice to use the mean monthly densities of birds in flight with the Band/deterministic collision risk model – e.g. mean bird densities were used in the CRM assessments for East Anglia 3 and mean densities were also used by the Vanguard Applicant in their PEIR.</p> <p>With regard to the MSS stochastic model, the user guide² for this states there are 3 options are provided for the bird densities through time (monthly):</p> <ol style="list-style-type: none"> 1. The first, referred to the “truncated Normal” mirrors that of Masden’s original code, but with the upper bound of the truncated Normal distribution removed (previously it was upper-bounded at 2). Data is entered as monthly means and standard deviations. A recommendation from the review in Trinder (2017) was this be removed. Simple means and standard deviations are required for each month. 2. The second option is by providing reference points (max, min and selected percentiles) for the user’s distribution of mean density. A template can be downloaded with this option that provides a CSV file to be filled. The file is then uploaded for analysis. 3. The third option is by providing 1000 samples from the user’s distribution of mean density. A template can be downloaded with this option that provides a CSV file to be filled. The file is then uploaded for analysis. 	See the below response to the RSPB, which is also applicable here.

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
			<p>Undertaking Collision Risk Modelling using standard approaches and parameters has the significant benefit of allowing cumulative impact assessments (including within Appropriate Assessments) to be carried out by decision-makers in a way that robustly quantifies the relative contributions of different projects to the overall impact. Presenting outputs from alternative methodologies does not allow this to be done, hence Natural England's emphasis on ensuring standard methodologies are used wherever appropriate.</p>	
23.66	RSPB	Can you confirm whether the use of mean density values is advocated in any particular guidance?	<p>The use of mean density values is not explicitly advocated in any guidance, but this is due to the lack of guidance for carrying out a stochastic collision risk assessment in general and not to the specifics of how to input density into the stochastic modelling process. As detailed in Trinder (2017), typically wind farm surveys are carried out over two years and so for each month there are two densities, one for each year. To obtain a final monthly collision rate using the Band (2012) deterministic formulation of the model, a mean of these would be taken. This is true of virtually every consented offshore wind farm since the model was published.</p> <p>The development of a stochastic version of the Band (2012) model, first by Masden (2015) as a proof of concept and then by MacGregor et al., (2018) allowed for uncertainty and variability to be incorporated into the Band model, including that around bird density. This uncertainty can be included in the model as a distribution, described by statistics such as confidence intervals and means or medians. The Masden model version did this using a truncated normal distribution with a mean, following stakeholder consultation and discussion with the project scientific steering group.</p> <p>Subsequent to Masden's work it became accepted that it was desirable to incorporate stochasticity into collision risk modelling, and this was reflected in scoping advice from the SNCBs. In response to such advice from Natural England, for the Hornsea Project Two application bird density was modelled using Generalised Linear Models whereby mean density was presented alongside 95% confidence intervals. This was accepted by the Examining Authority</p> <p>The MacGregor et al, (2018) model version included the facility to use a revised truncated normal distribution, modified following the recommendations of Trinder (2017) with mean and standard deviation, along with two further options for other user specified distributions. The first option is by providing reference points (max, min and selected percentiles) for the user's distribution of mean density, the second is by providing 1000 samples from the user's distribution of mean density.</p> <p>While neither Masden or MacGregor et al., can be seen as formal guidance, their consistent use of the mean, alongside the historical use described above set a strong precedent for using this and can therefore be considered the standard approach. In the guidance accompanying the Band (2012) model, it is said that "Developers and their advisors are encouraged where appropriate to go beyond the core requirements set out in this guidance; but where they do so, the standard approach of this guidance should also be pursued so as to make clear how the results of any improved methods differ from that of the standard approach."</p> <p>The Applicant's discussion of the use of medians is relevant, but incomplete data are presented to support the approach taken, in particular, the mean monthly densities (not, as is presented in Annex 1 of Appendix 13.1, means of medians) are not presented. In not doing so, the Applicant is contravening the guidance detailed above.</p>	<p>For clarity, the Applicant considers it important to state the approach used for the collision risk modelling.</p> <p>The Applicant used a stochastic implementation of the Band (2012) model in the ES. It is important to note that this was not a new or different model, but simply scripted the calculation steps set out in the Band spreadsheet using the R language. Doing this permitted the calculations to be looped multiple times with randomly generated input parameter values for each iteration, thereby incorporating stochasticity.</p> <p>As the RSPB note, the question of how to generate the randomised input parameters has not previously been subject to guidance as this is a new approach.</p> <p>It is also important to note that the Applicant did not use median densities as input values for the full stochastic model, as these in fact used densities sampled from the complete range of data available (derived as a bootstrap resample from the survey data). Therefore, the question of which measure of central tendency to use is not relevant to those model runs. The complete outputs were also presented in full (graphically) and summarised as the median and 95% confidence intervals. The median was selected rather than the mean because it was evident that in many cases it was more representative, owing to the pronounced skew in the collision predictions. Furthermore, in cases where this skew was less evident or absent then the median and mean were typically very similar (i.e. the median and mean are the same for a symmetrical normal distribution).</p> <p>The Applicant welcomes the acknowledgement from the RSPB that developing methods beyond the current core requirements is encouraged, and hope that the matters raised by Natural England and the RSPB in this regard can be resolved.</p> <p>However, the Applicant has also agreed to provide deterministic collision estimates derived using Band (2012) and these will be submitted at Deadline 6.</p>

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
23.67	NE	Can you comment on whether AEOI could be ruled out for collision risk for any features of the European sites currently under discussion, should the ExA be minded to agree to the use of median values?	We do not consider that median values provide a robust basis for collision risk modelling, and therefore do not agree that it would be safe to rule out adverse effects on integrity for any features on this basis.	Updated collision assessments will be provided by the Applicant at Deadline 6 which will include estimates calculated using the mean densities, therefore this aspect will be addressed.
23.67	RSPB	Can you comment on whether AEOI could be ruled out for collision risk for any features of the European sites currently under discussion, should the ExA be minded to agree to the use of median values?	<p>Please see Natural England's comments in REP3-051 regarding our advice on the use of median densities and the use of the Applicant's stochastic model in the CRM. Natural England's position regarding the use of the median densities will not change and we advise that the mean densities and the deterministic/Band model is the appropriate approach.</p> <p>With regard to designated sites, we have not received anything further from the Applicant and therefore apart from the issues with the CRM figures, issues still remain regarding apportionment rates, offshore wind farm figures that have not been included for relevant other offshore wind farms (e.g. Kincardine, Hywind and Moray West). However, we are aware that the Applicant is proposing to provide updated information around these issues and revised CRM figures for the designated sites and so Natural England will respond accordingly once this information has been received and reviewed.</p>	<p>Please see the Applicants response to Q 23.66 above.</p> <p>In addition further assessment to address these matters will be submitted at Deadline 6.</p>
23.68	NE	In relation to the Hornsea Project Three data, the Applicant can only base its in-combination assessment on the information available to it. Therefore, please can you comment on the in-combination assessments on this basis. Are you able to provide any indication of how the relevant figures for Hornsea Project Three could change and affect the in-combination assessment?	<p>At this time Natural England is still working with the Hornsea Project Three Applicant to understand the assessments and consider the impacts from that project alone and cumulatively/in-combination and therefore, at this stage we cannot verify what figures should or should not be used for this project in cumulative or in-combination assessments. However, it should be noted that Natural England has fundamental concerns with the baseline data for Hornsea Project Three and therefore, there will be significant challenges associated with taking forward cumulative and in-combination assessments.</p> <p>In a call between Natural England and the Vanguard Applicant on 8th March 2019, it was agreed that the Vanguard Applicant would review Natural England's advice on Hornsea Project Three that is to be submitted on the 14th March 2019.</p>	The Applicant is reviewing the submissions made by Natural England for Hornsea Project THREE, as well as Hornsea Project THREE's own submissions, with a view to updating the figures for Hornsea Project THREE to be used in the Norfolk Vanguard cumulative and in-combination assessments.
23.69	NE	Further to the ExQ1 3.16, please assess and comment on any areas of disagreement regarding the Applicant's Deadline 3 submission 'Migrant non-seabird Collision Risk Modelling' [REP3-038].	Please see our full response on Migrant Non-seabird Collision Risk Modelling, also provided at Deadline 4, for our response to REP3-038	The Applicant is currently reviewing Natural England's response and will provide a response at Deadline 6.
23.73	NE	Do you have any further comments regarding collision risk mortality to herring gull from the Alde-Ore Estuary SPA?	Herring gull is not a qualifying feature of the Alde-Ore Estuary SPA, therefore we do not have any further comments regarding collision risk mortality of this species at this site.	No response.
23.77	NE	Please confirm whether your concerns regarding operational displacement of auks at FFC SPA are in respect of the project alone or in-combination with other plans or projects.	Our concerns regarding operational displacement of auks at the FFC SPA are with respect to in-combination	<p>The Applicant has considered the potential for auks from Flamborough and Filey Coast (FFC) Special Protection Area (SPA) to be at risk of a likely significant effect (LSE) due to in-combination displacement and concluded that this can be ruled out:</p> <ul style="list-style-type: none"> • During the breeding season (because Norfolk Vanguard is beyond foraging range); and • During the nonbreeding season because the proportion of the wintering populations originating from FFC is very small (5% for guillemot, 3.3% for razorbill) and when combined with the low number estimated to be affected by displacement at Norfolk Vanguard (even using Natural England's precautionary rates only 7% of the guillemots and razorbills on the wind farm would be affected). <p>Thus, Norfolk Vanguard would at most cause the mortality of 10 guillemots and 4 razorbills from the FFC populations of c. 40,000 pairs and 10,000 pairs respectively. These levels of impact are so small that they would not make a</p>

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				detectable contribution to an in-combination impact and therefore an LSE can be ruled out.
23.79	NE	Can you please explain whether, using the figures you have calculated with apportionment rates of 4.8% for autumn and 6.5% for spring, you consider there to be an AEOI to gannets of the FFC SPA during the nonbreeding season? Please provide further justification for the use of these apportionment rates.	<p>As highlighted in our Relevant Representations (RR-106), for the apportionment of impacts of species to relevant SPA colonies during the non-breeding seasons, Natural England recommend that the data presented in the tables in Appendix A of Furness (2015) for the relevant species Biologically Defined Minimum Population Scales (BDMPSS) for each season (e.g. migration, winter etc.) are used. We would advise that the proportion the relevant colony figure represents of the total number of birds of all ages in the relevant BDMPS in the season in question is used as the apportionment figure. We do not recommend that the colony figures presented in the tables in Appendix A for the SPA colony in question are updated with more recent figures, unless there is evidence to suggest that the colony in question has increased or decreased relative to other colonies.</p> <p>Whether the colony figure in the BDMPS tables used is the adult figure or that for all ages depends on any Population Viability Analysis (PVA) model and outputs to be used. Given that the outputs of the existing PVAs tend to be on an adult currency, Natural England advises that calculations of baseline mortality used in the HRA are undertaken on an adult currency, therefore using the adult colony figure and the adult mortality rate rather than on all ages.</p> <p>As outlined in our response to the Applicant's response to the first ExA Question 23.44 [REP2-036], following this recommended approach, we have calculated apportionment rates of 4.8% for autumn and 6.5% for spring. These have been calculated via the following approach:</p> <p>Autumn migration: number of FFC SPA adult gannets in North Sea and Channel BDMPS = 22,122 and the total number of birds of all ages in the BDMPS = 456,299. So the proportion of FFC SPA adult birds = $(22,122/456,299) \times 100 = 4.8\%$.</p> <p>Spring migration: number of FFC SPA adult gannets in North Sea and Channel BDMPS = 15,485 and the total number of birds of all ages in the BDMPS = 248,385. So the proportion of FFC SPA adult birds = $(15,485/248,385) \times 100 = 6.2\%$.</p> <p>These figures are consistent with our advice on this matter for Hornsea Project Three.</p> <p>Following a call between Natural England and the Vanguard Applicant on the 8 March 2019 we understand that the differences arise due to the Applicant using the apportionment approach undertaken at East Anglia Three and the Dogger Bank projects, which makes considerations of proportions of birds migrating north and south from colonies including Flamborough. Whilst this approach was accepted at the previous cases, this was not used in the Furness (2015) report that is publically available and we continue to advise that the approach we have set out above is used. This is consistent with advice at Hornsea 3 and will ensure consistency in the approaches used for non-breeding season apportionment across projects going forwards. We understand from discussions with the Applicant on 8th March that this approach, along with the Applicant's preferred approach, will be provided; which is welcomed.</p> <p>With regard to in-combination CRM, there remain other relevant offshore wind farms for which figures are currently not included in Vanguard's in-combination CRM assessment (e.g. Kincardine, Hywind and Moray West). Therefore, at present we cannot reach any agreements on AEOI from Vanguard alone or in-combination.</p>	<p>The Applicant provided reports at Deadline 4, EA3 HRA Appendix 3 (document reference ExA;FurtherWQApp23.1;10.D4.6) and EA3 HRA Appendix 4 (document reference ExA;FurtherWQApp23.2;10.D4.6) which set out the apportioning methods and results, which (as noted by Natural England) have been accepted as appropriate for several previous wind farm applications (including Dogger Bank Creyke Beck, Dogger Bank Teesside and East Anglia THREE).</p> <p>Therefore the Applicant considers these to be robust and appropriate for the current assessment.</p> <p>This point notwithstanding, the Applicant has agreed to provide updated assessment at Deadline 6 using Natural England's preferred methods (alongside the Applicant's).</p> <p>The updated assessment to be provided at Deadline 6 will include additional and updated figures for other offshore wind farms as identified by Natural England.</p>

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			As noted in our response to question 23.67 above, we are aware that the Applicant is proposing to provide updated information around these issues and revised CRM figures for the designated sites and so Natural England will respond accordingly once this information has been received and reviewed.	
23.83	NE	Having regard to the Applicant's response at D1, please can you expand on your concerns regarding nocturnal activity rates?	We welcome the provision of updated collision mortality figures using the Furness et al. (2018) nocturnal activity rates for gannet and the NE recommended rates for kittiwake and large gulls, although these do increase concerns about levels of collision risk. There is also still a need to resolve the query regarding survey timings outlined in section 4.2 of our Written Representations. If survey timings are not known and hence it is not known whether likely peaks in activity at first and last light are accounted for, the more precautionary rates based on Garthe and Huppopp (2004) and Furness et al., (2013) should be used for gannet as well. We further welcome the Applicant's statement that the timing of surveys and diurnal patterns of activity are important and that these were given careful consideration. However, no information is given on these considerations, in particular, actual timings of surveys and details of the sources of information relied upon for the conclusions regarding seabird flight activity during autumn, winter and spring.	Details of survey timings were submitted by the Applicant at Deadline 4 (Norfolk Vanguard Offshore Wind Farm Ornithology Aerial Surveys: Dates and Times ExA; FurtherWQApp3.1; 10.D4.6). These demonstrate that surveys were conducted across representative periods of the day across the 32 months (Norfolk Vanguard East) and 24 months (Norfolk Vanguard West) of survey data. It is also worth noting that Furness et al. (2018) demonstrated that gannet flight activity varies quite widely through the day and that the survey timings therefore overlap these levels and provide a representative sample of flight activity. The Applicant considers this should satisfy the RSPB's concern in this regard.
23.83	RSPB	Having regard to the Applicant's response at D1, please can you expand on your concerns regarding nocturnal activity rates?	Our advice regarding nocturnal activity has been set out in detail in our Relevant Representations (RR-106), Written Representations (REP1-088), our response to first ExA question 3.3 part g) in Annex A of our Written Representations (REP1-088), our response to the Applicant's Section 51 response (REP2-038), and our response to the Applicant's response to question 3.3 part g) of the first round of ExA questions, provided at Deadline 4 as Comments on Applicants Response to Natural England's Response to First Round of Written Questions [REP2-004]. Our position on this remains unchanged.	See response to this question addressed to the RSPB above. Additional assessment using Natural England's preferred rates will be submitted at Deadline 6.
23.91	NE	In its response to ExQ1 the Applicant states that it cannot agree to no cable protection being installed. Consequently, are there any measures that the Applicant could implement that would satisfy you and lead you to be able to conclude that there would be no AEOI resulting from the installation of cable protection within the Haisborough, Hammond and Winterton SAC (HHW SAC)?	Natural England had a call with the applicant on 8 March 2019 and during that discussion the Applicant stated that they were undertaking further assessment of their survey data to inform an interim cable burial study. Once that is submitted Natural England will provide further advice. Please see our generic cable protection advice note provided at Deadline 4 in the interim.	As discussed in the joint position statement (document reference ExA; AS; 10.D4.8), the Applicant is progressing an interim cable burial study in the Haisborough, Hammond and Winterton SAC and would welcome Natural England's further advice on this matter. In addition, and as outlined in the Applicant's Deadline 4 submission, the Applicant proposes that mitigation associated with the SAC is secured in a single plan (a Norfolk Vanguard Haisborough, Hammond and Winterton SAC Site Integrity Plan) and through a separate condition in the transmission asset DMLs. The Applicant is engaging with Natural England as to the precise wording of the condition and content for the plan. The Applicant will also take into account the advice notes provided by Natural England at Deadline 4.
23.92	NE	You raised comments in your RR [RR-106] on the Applicant's Outline Scour Protection and Cable Plan, and the Applicant has responded that the Plan would be updated as the final design develops. Do you have any further comment to make, and does the relevant Condition in the DMLs provide you with sufficient comfort that there would be no AEOI to the HHW SAC for scour protection and cable protection?	The condition as it stands doesn't provide the necessary comfort to rule out an AEOI at the time. However, again during the call on 8 March 2019 the Applicant has proposed to provide a Site Integrity Plan for HHW SAC which they intend to provide some comfort to Natural England. Once this is submitted we will provide further advice	The Applicant is engaging with Natural England as to the precise wording of the condition and content for a Haisborough, Hammond and Winterton SAC Site Integrity Plan and would welcome Natural England's further advice on this matter.
23.93	NE	Do you have any further comments to make following the Applicant's confirmation that the proposed cable protection would remain in place upon decommissioning?	Natural England advises that cable protection would result in a change of habitat within the SAC. Please note that once the interim cable burial study is provided Natural England will provide further advice on the permanency of the impact. In the interim, please see our generic cable protection advice note provided at Deadline 4.	The Applicant notes the 'Generic cable protection advice note' provided by NE at Deadline 4. With regard to the specific follow-on question put to NE by the ExA, para 1.1 of this note sets out NE's view that addition of "hard strata" such as cable protection is "often incompatible" with conservation objectives for Annex 1 sandbanks and reef features. Given this, the Applicant is considering the feasibility of reducing the worst case scenario (WCS) provision for surface

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23.94	NE	Do you have any further comments to make regarding the issue of micro-siting within the HHW SAC?	<p>As set out in our response to the Applicant's response to our answer to the first set of Examiners question 5.26</p> <ol style="list-style-type: none"> 1) Natural England agrees that there is an element of patchiness to Sabellaria spinulosa reef (Gubbay 2007). However, the point here is that when undertaking Annex I reef surveys an area with the same side scan sonar 'reef' return is identified and the extent of that habitat is mapped. That potential reef area is then ground truthed using grab samples and drop down video to determine the reefiness qualities i.e. elevation, abundance and patchiness. The micro siting condition is to avoid areas of reef no matter what the quality. Therefore the suggestion to go through areas of reef that has less coverage is outside the proposed mitigation. For this to be feasible there would need to be a 15-20m wide corridor (similar to a dual carriageway travelling in both directions) with no Sabellaria spinulosa in it, and recognising that similar to a road the bend radius of a cable is about 5m making the ability to weave around features challenging if not impossible. Hence the requirement to avoid areas completely. 2) The fisheries byelaw areas have been identified to manage DEFRA's 'Red' risks from ongoing fisheries and enable recovery of the Annex I reef features. Any anthropogenic impacts should not hinder the management of these areas. In allowing cable installation through these areas it would almost certainly slow the trajectory of recovery and temporarily reverse any recovery that management measure had achieved. Whilst it is acknowledged that these management areas will include areas where reef may be absent at any given moment in time, the sediment included is considered by Natural England to have the potential for reef to develop. Hence the management for recovery. Previously it has been agreed that if the Annex I preconstruction surveys show that reef is absent at the time of construction then cable installation could happen within the byelaw areas of the Wash. However, as demonstrated by the Race Bank OWF located in the Wash and North Norfolk Coast SAC the cable installation is no longer considered a one off activity especially where reburial and/cable repairs are required over the life time of the project. Which would further hinder the management measures. <p>In addition to this if cable protection is installed then there will be a permanent change to the habitat and therefore we believe that there will be a loss of feature extent and the management measures for the site would be hindered. Therefore we advise that if cable installation with the byelaw area is permitted by the Secretary of State then there would need to be a restriction of no cable protection in that area. But given this is likely to be an area of mixed sediment rather than sand it is likely to be the most challenging habitat for installing cable within the site. Accordingly consideration of the most appropriate installation technique would be required</p>	<p>protection within the SAC. At present, this provision is 10% of the total length of cable-pairs installed in this area.</p> <p>As outlined in the Applicant's Deadline 4 submission, the Applicant proposes that mitigation associated with the HHW SAC is secured in a single plan (a Norfolk Vanguard Haisborough, Hammond and Winterton SAC Site Integrity Plan) and through a separate condition in the transmission asset DMLs.</p> <p>This would include the points raised by Natural England in relation to the SAC, including <i>inter alia</i>:</p> <ol style="list-style-type: none"> 1. Micrositing for <i>Sabellaria spinulosa</i> reef; 2. Cable installation methods and potential maintenance; and 3. Extent, type and location of cable protection. <p>The Applicant is engaging with Natural England as to the precise wording of the condition and content for the plan. An Outline Plan will be submitted to the Examination following ongoing consultation with Natural England. A final Site Integrity Plan would be produced prior to construction based on latest guidance, pre-construction survey data and available relevant evidence from other projects where possible.</p>

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23.96	NE	Please explain why sandwave levelling, seabed preparation and disposal warrant a separate plan and why this cannot be secured as part of the detailed cable specification, installation and monitoring plan that is secured through Condition 9(1)(g) of Schedules 11 and 12 of the DMLs?	Natural England has no issue with the plans being combined into one document. However, we wish to ensure that such a document includes a thorough sandwave levelling, site preparation and disposal methodology and assessment. Therefore we request that reference is made to these specific elements in the DCO/DML to ensure that they are provided	As stated above and in the Applicant's Deadline 4 submission, the Applicant proposes that there is benefit in securing the mitigation associated with the Haisborough, Hammond and Winterton SAC in a single Site Integrity Plan, secured through Condition 9(1)(m) of the transmission asset DMLs. This would include potential sandwave levelling, site preparation and disposal methodology. The Applicant is engaging with NE as to the precise wording of the condition and content for the plan.
23.98	NE	Are you content that a detailed cable laying plan would be secured through condition 9(1)(g) of Schedules 11 and 12 of the DMLs? Would you still also require the submission of a burial risk assessment?	During our call with the Applicant on 8 March 2019 the Applicant committed to undertaking a burial risk assessment document, which we anticipate being a live document that would be updated as more survey data becomes available.	An interim cable burial study has been commissioned by the Applicant in response to requests from Natural England. The Applicant has undertaken this interim assessment for the HHW SAC and the Applicant expects that the results of this risk assessment will inform the production of the outline Norfolk Vanguard Haisborough, Hammond and Winterton Special Area of Conservation Site Integrity Plan (to be secured through Condition 9(1)(m) of the Transmission DMLs). The Applicant agrees that a detailed cable burial risk assessment would be produced prior to construction, based on pre-construction survey data. This is secured in Condition 14(1)(g)(ii) of the Generation DMLs (Schedule 9-10) and Condition 9(1)(g)(ii) of the Transmission DMLs (Schedule 11-12).
23.100	NE	In relation to the Southern North Sea cSAC (SNS cSAC) please indicate whether you still have concerns that the Applicant should demonstrate that the fish assemblages (for example sandeels and herring) that are key prey species for harbour porpoise would not be adversely affected by the proposed project.	Natural England acknowledges the applicant will seek to address these concerns post consent as Natural England is concerned that no further monitoring or independent surveys are proposed regarding Fish and Shellfish ecology within the In Principle Monitoring Plan. Sandeel and herring habitat is of particular interest as these are important prey species including for harbour porpoise of the Southern North Sea cSAC (candidate Special Area of Conservation) /SCI. However Natural England would defer to Cefas on this issue.	As stated in the Norfolk Vanguard IPMP (document 8.12), the aims of project monitoring are to address significant evidence gaps or uncertainty and/or to monitor potentially significant impacts. ES Chapter 11 Fish and Shellfish Ecology concludes that impacts would be non-significant (negligible or minor). As a result, no fish monitoring for construction or operation is proposed. This is agreed with the MMO as shown in the Statement of Common Ground (SOCG) (document reference Rep1 - SOCG - 11.1).
23.101	MMO	Please comment on any implications of the Southern North Sea SCI: Review of Consents for harbour porpoise, including any additional or amended conditions you would wish to see included in the dDCO.	The MMO defer to Natural England to discuss any implications of the review of consents relating to HRA. The MMO believe the current conditions are appropriate however the MMO notes the ongoing Review of Consents, conducted by BEIS, has produced some standard wording for this condition which the MMO would recommend including for consistency. The MMO considers that the SIP provides a mechanism of control to ensure unacceptable in-combination impacts do not occur.	The Review of Consents proposed DCO wording remains in draft and was subject to recent consultation by the MMO (Southern North Sea SCI: Review of Consents - Proposed Marine Licence Condition: Site integrity Plan (30 January 2019)). The Applicant therefore suggests this is still subject to change and should therefore not be used in the Norfolk Vanguard DCO. The Norfolk Vanguard condition wording is consistent with the consented East Anglia THREE DCO.
23.102	NE	A conclusion of no AEOL on the SNS cSAC relies on appropriate mitigation measures being secured in the final Site Integrity Plan and Marine Mammal Mitigation Protocol. However, these mitigation measures are not yet specified and there remains some doubt over how effective certain measures, such as soft start piling, actually are. Please comment further on this matter.	Following further internal discussion, Natural England is satisfied that the soft-start protocol is fit for purpose. We are therefore content that both the MMMP and the SIP will contain appropriate mitigation measures once they are agreed and finalised to address an AEOL alone.	The Applicant agrees and has no further comments.
23.102	MMO	A conclusion of no AEOL on the SNS cSAC relies on appropriate mitigation measures being secured in the final Site Integrity Plan and Marine Mammal Mitigation Protocol. However, these mitigation measures are not yet specified and there remains some doubt over how effective certain measures, such as soft start piling, actually are. Please comment further on this matter.	The MMO would defer to Natural England on the effectiveness of the mitigation. The MMO would note that the Site Integrity Plan and Marine Mammal Mitigation Protocol provide the mechanism to incorporate further technological advances and amend the appropriate mitigation at the stage of construction.	The Applicant agrees and has no further comments.
23.102	TWT	A conclusion of no AEOL on the SNS cSAC relies on appropriate mitigation measures being secured in the	In relation to the Site Integrity Plan, evidence of the effectiveness of mitigation measures such as bubble curtains may be available from offshore wind farm	The In Principle SIP (document 8.17) provides a framework to agree mitigation based on the latest guidance, evidence and technology at the stage of pre-

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		final Site Integrity Plan and Marine Mammal Mitigation Protocol. However, these mitigation measures are not yet specified and there remains some doubt over how effective certain measures, such as soft start piling, actually are. Please comment further on this matter.	development in Germany. TWT suggests more evidence is required to give confidence on the effectiveness of mitigation measures. Where evidencing is lacking, monitoring should be put in place. This is supported by European Commission Guidance on Article 6 (page 52)2 which outlines: "For the competent authority to be able to decide if the mitigation measures are sufficient to remove any potential adverse effects of the plan or project on the site (and do not inadvertently cause other adverse effects on the species and habitat types in question), each mitigation measure must be described in detail, with an explanation based on scientific evidence of how it will eliminate or reduce the adverse impacts which have been identified. Information should also be provided of how, when and by whom they will be implemented, and what arrangements will be put in place to monitor their effectiveness and take corrective measures if necessary.	construction. The wording of the DCO removes any uncertainty regarding the potential for an AEOL through the commitment in Schedules 9 and 10, Condition 14(1)(m) and Schedules 11 and 12, Condition 9(1)(l) which ensures that piling cannot commence until "the MMO is satisfied that the plan, provides such mitigation as is necessary to avoid adversely affecting the integrity". In the Applicant's response to Offshore Issue Specific Hearing (ISH2) Action Point 2, Consideration of Cumulative Impacts on Marine Mammals - Delivery of the Site Integrity Plan (document reference ExA; ISH2; 10.D4.4), a range of management strategies that could be adopted has been outlined. This includes noise thresholds (e.g. as adopted in the Netherlands and Germany).
23.102	WDC	A conclusion of no AEOL on the SNS cSAC relies on appropriate mitigation measures being secured in the final Site Integrity Plan and Marine Mammal Mitigation Protocol. However, these mitigation measures are not yet specified and there remains some doubt over how effective certain measures, such as soft start piling, actually are. Please comment further on this matter.	Whilst WDC agree with the Site Integrity Plan (SIP) and Marine Mammal Mitigation Protocol (MMMP) in principle, there is currently a lack of guidance, based on the latest scientific information, on how to undertake these plans, particularly for SIPs which are relatively new. As a result these documents contain very little detail or assessment and have not included the latest research, they are little more than a commitment to use mitigation methods. As a result in their current form the plans cannot remove all reasonable scientific doubt as to the effects of the projects on cetaceans or ensure no Adverse Effect on Integrity (AEOL) on the SNS SCI. To ensure the SIP and MMMPs are fit-for-purpose there needs to be guidance from SNCBs on what to include. We recommend this should include a commitment to proven mitigation methods and modelling of likely mitigation measures to be included to ensure that these plans can reduce uncertainty of the impact of offshore wind farm construction. There are a number of studies demonstrating the benefits of mitigation measures (Brandt et al., 2018; Dähne et al., 2017; Nehls et al., 2016; WWF, 2016). Current embedded mitigation measures included in JNCC guidelines have not been proven in studies, and have been widely criticised as arbitrary and with a lack of supportive evidence (Wright and Cosentino, 2015). Additionally the guidelines have not been updated for a number of years and therefore do not include the latest and increasing body of scientific data of the impacts of noise on marine mammals (Wright and Cosentino, 2015). We would also recommend that there also needs to be a robust assessment strategy that includes strategic monitoring to ground-truth the modelling results and verify if the mitigation is successful.	The Applicant maintains that this highlights the importance of the In Principle Site Integrity Plan (document 8.17) which provides a framework to agree mitigation based on the latest guidance, evidence and technology at the pre-construction stage. The wording of the DCO removes any uncertainty regarding the potential for an adverse effect on integrity (AEOL) through the commitment in Schedules 9 and 10, Condition 14(1)(m) and Schedules 11 and 12, Condition 9(1)(l) which ensures that piling cannot commence until "the MMO is satisfied that the plan, provides such mitigation as is necessary to avoid adversely affecting the integrity". The final Site Integrity Plan would provide details of the mitigation measures and evidence of the effectiveness, taking into account the final design of the project, site specific characteristics and relevant evidence from other projects where available.
23.105	NE	The conclusions of no AEOL for all onshore sites presented in the Information to Support HRA report (document 5.3) are not agreed by NE. NE's position is summarised in the SoCG with NE [REP1-049]. Please provide an update as to the position on this matter.	Natural England and the Applicant are in discussion in this regard. The applicant has provided an updated Clarification Note on 27 February 2019 and Natural England will respond by deadline 5 and feed into the updated SoCG as agreed in our joint position statement.	As discussed in the joint position statement (document reference ExA; AS; 10.D4.8), the Applicant is engaging with Natural England and will update the examination following feedback from Natural England on the content of this clarification note.
23.106	NE	The conclusions of no adverse effect on site integrity for all onshore sites presented in the Information to Support HRA report (document 5.3) are not agreed by NE. NE's position is summarised in the SoCG with NE [REP1-049]. Please provide an update as to the position. In particular:	An assessment of potential impacts of alternatives of trenched and trenchless crossing techniques have not been provided. The clarification note does not currently contain an in combination assessment with Hornsea 3 cable route.	The Applicant has provided further clarification to Natural England on Booton Common SSSI and Norfolk Valley Fens SAC. Natural England responded to this on 18 th March 2019 removing their concerns stating: "Natural England agrees with the conclusion of no Likely Significant Effect to Booton Common SSSI and the Norfolk Valley Fens SAC from open cut trenching and dewatering or directional drilling based on the conceptual model and the mitigation measures, which have

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		<ul style="list-style-type: none"> Can the Applicant provide a comparison of the impact of trenched and trenchless crossing techniques on the flow of water to Botton Common SSSI and Norfolk Valley Fens SAC, as requested by NE? What is the Applicant's response to NE's comments regarding the need for sensitive restoration within the River Wensum floodplain north of Penny Spot Beck? Can the Applicant provide an update on the assessment of impacts to River Wensum SAC, Norfolk Valley Fens SAC and The Broads SAC when considered in-combination with the Hornsea 3 cable route? 		<p><i>enabled a conclusion of low or negligible risk. Therefore, we agree with the conclusions of no adverse effect on integrity.</i></p> <p>The Applicant has provided further clarification to Natural England related to works within the River Wensum floodplain. Natural responded to this on 18th March 2019 and withdrew most of their concerns; however, some concerns remain related to sediment management outside of the floodplain. The Applicant will continue to discuss this issue with Natural England.</p> <p>With regards to cumulative impacts with Hornsea 3 related to water dependent sites, the clarification note provided to Natural England concluded that no pathway between the onshore project area and any of the designated sites has been identified. As the installation of the cable route cannot be demonstrated to affect the groundwater supply to these sites, further detailed assessment is not deemed necessary. Natural England agreed with the findings set out within this note and withdrew their concerns.</p> <p>As there is no demonstrable mechanism for an effect associated with Norfolk Vanguard alone, it follows that there can be no cumulative impact with any other project.</p>
23.107	NE	A Clarification Note: Bat Impact Assessment – Paston Great Barn Special Area of Conservation (SAC) is provided by the Applicant as an appendix to your SoCG with the Applicant [REP1-049]. Please identify specifically which parts of the assessment if any with which you disagree and why.	Natural England are currently reviewing the updated Bat Clarification Note and will respond for Deadline 6.	Natural England responded to the Clarification Note (Bat Impact Assessment – Paston Great Barn SAC) on 20 th March 2019 removing their concerns stating: <i>“Following receipt of further information on 27 February 2019 Natural England is satisfied that the specific issues we have raised in previous correspondence relating to the assessment of bats at Paston Great Barn SAC have been resolved.”</i>
23.109	NE	Please detail your remaining concerns as to the potential impact on Paston Great Barn SAC and detail the further information you have sought from the Applicant.	Natural England are currently reviewing the updated Bat Clarification Note and will respond as per the joint position statement for Deadline 6.	Natural England responded to the Clarification Note (Bat Impact Assessment – Paston Great Barn SAC) on 20 th March 2019 removing their concerns stating: <i>“Following receipt of further information on 27 February 2019 Natural England is satisfied that the specific issues we have raised in previous correspondence relating to the assessment of bats at Paston Great Barn SAC have been resolved.”</i>

1.24 Onshore Ecology

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
24.20	NE	NPS EN-1 Sections 5.3.16 – 5.3.17 requires the ExA to have regard to the protection of legally protected species and habitats and species of principal importance for nature conservation and to refuse consent where harm to the habitats or species and their habitats would result, unless the benefits (including need) of the development outweigh that harm, and to give substantial weight to any such harm to the detriment of biodiversity features of national or regional importance which it considers may result from a proposed development. Please provide an update as to the final position set out in Table 12, Statement of Common Ground - Onshore ecology and ornithology [REP1-049], specifically commenting on legally protected species and habitats and species of principal importance for nature conservation.	Updated clarification notes were provided by the Applicant on 27 February 2019. Discussions are ongoing as to these Clarification Notes and Natural England will feed into the updated SoCG for deadline 5 as per the joint position statement.	As discussed in the joint position statement (document reference ExA; AS; 10.D4.8), the Applicant is engaging with Natural England and will update the examination following feedback from Natural England on the content of these clarification notes.
24.21	NE	As to the impacts on groundwater supply and surface water quality for Dereham Rush Meadow SSSI, Holly Farm Meadow, Wendling SSSI, Whitwell Common SSSI and Booton Common SSSI, what further information if any is now available to aid appraisal of these effects?	Updated clarification notes were provided by the Applicant on 27 February 2019 Discussions are ongoing as to these Clarification Notes and Natural England will feed into the updated SoCG for deadline 5.	The Applicant has provided further clarification to Natural England on the water supply mechanisms to these designated sites. Natural responded to this on 18 th March 2019 removing their concerns stating: <i>"The updated Clarification Note dated 25 February 2019 provides sufficient detail regarding potential hydrological impacts on the sites where Natural England are particularly concerned. The updated Clarification Note now considers the EA's WETMEC data showing the water supply mechanism for all the component sites and provides a conceptual model to consider the risks of ground water supply to the sites from the development of the cable route. Natural England is happy that this is in line with the EA conceptual model."</i>
24.22	NE	Appendix 2 of [REP1-049] provides an assessment of effects on certain water dependent designated sites according to their proximity to the proposed location of onshore buried cables. What specific further information do you require to assess the functional connections and the effects from potential changes to groundwater supply to Badley Moor SSSI, Buxton Heath SSSI, Southrepps Common SSSI, Potter & Scarning Fens, East Dereham SSSI and why does the information in Appendix 2 not reasonably demonstrate that there would be no direct pathway between the construction works and the underlying chalk aquifer for these sites which are further away from the construction footprint?	Updated clarification Notes were provided by the Applicant on 27 February 2019. Discussions are ongoing as to these Clarification Notes and Natural England will feed into the updated SoCG for deadline 5.	The Applicant has provided Natural England with an update to Appendix 2 (Water Dependent Designated Sites Clarification Note) on 27 th February 2019. Natural responded to this on 18 th March 2019 removing their concerns stating: <i>"The updated Clarification Note dated 25 February 2019 provides sufficient detail regarding potential hydrological impacts on the sites where Natural England are particularly concerned. The updated Clarification Note now considers the EA's WETMEC data showing the water supply mechanism for all the component sites and provides a conceptual model to consider the risks of ground water supply to the sites from the development of the cable route. Natural England is happy that this is in line with the EA conceptual model."</i>
24.26	NE	The Applicant states in its comments at DL2 on NE's response to FWQ 24.15 that whilst its Phase 1 habitat surveys were undertaken outside of the optimum survey window, they are deemed sufficient. Please comment.	Any future surveys should aim for better coverage and be completed within the optimum survey season, as agreed in SoCG.	The Applicant has committed to undertake Phase 1 habitat survey for all the previously unsurveyed areas post-consent. This is captured in the OLEMS and secured through Requirement 24. For added clarity the OLEMS will be updated to confirm that surveys will be undertaken during the optimum survey period.
24.27	NE	How do you propose that it be secured within the DCO that future ecological assessments undertaken will cover a greater area and are conducted within the optimum survey window?	It should be secured as a DCO condition Licence as part of the terrestrial In Principle Monitoring Plan that all ecological assessments are conducted within the optimum survey window and cover the redline boundary and buffer, with ecological assessment methodology statements and Protected Species License requests submitted to Natural England.	The Applicant has committed to undertake pre-construction surveys for all onshore ecological receptors, which is captured within the OLEMS, and secured through DCO Requirement 24. For each ecological receptor the OLEMS states that <i>"For all unsurveyed areas of onshore cable route, a full [ecological receptor] survey will be undertaken"</i> . For added clarity the OLEMS will be updated to

PINS Question Number	Question is addressed to:	Question:	Interested Parties' Response at Deadline 4	Applicant's Response:
				confirm that each of these surveys will be undertaken during the optimum survey period.
24.29	Applicant/NE	Please provide an update on the position regarding mitigation of impacts outlined in WQ24.28 above including what further changes if any are proposed to the CoCP or OLEMS to deal with the risk of damaging or destroying ground nesting birds (i.e. skylarks) during construction.	Natural England have not been consulted on any further changes incorporated into CoCP or OLEMS, as yet.	<p>The question relates the Examiner's query as whether ground-nesting birds should be listed as protected species where works should cease immediately if they are unexpectedly found, and whether the OLEMS should be updated to reflect this. The issues raised here are addressed in the Applicant's response to Q24.24 of the Examiner's second written questions submitted at Deadline 4</p> <p>The OLEMS states that works will cease immediately if any protected species are unexpectedly found (section 12.1 – actions to be undertaken by the Environmental Clerk of Works (ECOW)). All ground nesting birds are protected and so are captured by the commitment stated above. The Applicant has not sought to include an exhaustive list of every protected species where the ECoW would request works to cease if they were unexpectedly found. The commitment is simply that works will cease if any protected species is unexpectedly found.</p>