



Applicant's Comments on Deadline 6 Written Submissions







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Table of Contents

1	Introduction	1
2	Applicant's Comments on Additional Submissions	2
2.1	National Farmers' Union (NFU)	2
2.2	Patricia Lockwood	4
2.3	Ray and Diane Pearce	9
2.4	Royal Society for the Protection of Birds (RSPB)	12
2.5	Trinity House	17
2.6	Highways England	18
2.7	North Norfolk District Council	19
2.8	Colin King	21
2.9	Marine Management Organisation (MMO)	23
2.10	Oulton PC	31
2.11	Happisburgh PC	34
2.12	Jenny Smedley	34
2.13	NSAG	37
2.14	EIFCA	42
2.15	Natural England	42
2.16	Cawston PC	54
2.17	Historic England	55





Glossary

AC	Alternating Current
AEol	Adverse Effect on Integrity
AEZ	Archaeological Exclusion Zone
ALO	Agricultural Liaison Officer
BDMPS	Biologically Defined Minimum Population Scales
BEIS	Department for Business, Energy and Industrial Strategy
BN	Briefing Note
CCATN	Cable Crossing Access Technical Note
CfD	Contract for Difference
CFP	Common Fisheries Policy
CIA	Cumulative Impact Assessment
CoCP	Code of Construction Practise
CPA	Compulsory Purchase Act
CRM	Collision Risk Modelling
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
dDCO	draft Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
DML	Deemed Marine Licence
EEZ	Exclusive Economic Zone
EIA	
	Environmental Impact Assessment
EIFCA ES	Eastern Inshore Fisheries and Conservation Agency Environmental Statement
ESRC	
	Economic and Social Research Council
ExA	Examining Authority
FFC	Flamborough and Filey Coast
FHL	Furnished Holiday Let
HDD	Horizontal Directional Drilling
HE	Historic England
HGV	Heavy Goods Vehicle
HHW	Haisborough, Hammond and Winterton
HOW3	Hornsea Offshore Windfarm Project Three
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IAQM	Institute of Air Quality Management
IEMA	Institute of Environmental Management and Assessment
IFCA	Inshore Fisheries and Conservation Agency
IHO	Exclusive economic zone
IPMP	In Principle Monitoring Plan
IROPI	Imperative reasons of Overriding Public Interest
ISH	Issue Specific Hearing
JNCC	Joint Nature Conservation Committee





LBBG	Lesser Black Backed Gull
LIG	Land Interest Group
LVIA	Landscape and Visual Impact Assessment
MCA	Maritime and Coastguard Agency
MCAA	Marine and Coastal Access Act
MMO	Marine Management Organisation
MPA	Marine Protected Area
NAF	Nocturnal Activity Factor
NCC	Norfolk County Council
NFU	National Farmers' Union
NNDC	North Norfolk District Council
NSAG	Necton Substation Action Group
NV	Norfolk Vanguard
OCoCP	Outline Code of Construction Practice
OFTO	Offshore Transmission Owner
OLEMS	Outline Landscape and Ecology Management Strategy
OPC	Oulton Parish Council
ORJIP	Offshore Wind, Offshore Renewable Joint Industry Project
ORM	Offshore Ring Main
ORPAD	Offshore Renewables Protocol for Reporting Archaeological Discoveries
OSPAR	Olso Paris Convention
ОТМР	Outline Traffic Management Plan
OWF	Offshore Windfarm
PHE	Public Health England
PRoW	Public Rights of Way
PVA	Population Viability Analysis
REC	Regional Environmental Characteristation
REIS	Report on the Implications of European Sites
RSPB	Royal Society for the Protection of Birds
RTD	Red Throated Diver
SAC	Special Area of Conservation
SACTN	Substations Access Clarifications Technical Note
SIP	Site Integrity Plan
SNCB	Statutory Nature Conservation Body
SoCG	Statement of Common Ground
SPA	Special Protection Area
SWDP	Surface Water and Drainage Plan
UXO	Unexploded Ordnance
VSC	Voltage Source Converter
WHO	World Health Organisation
WSI	Written Scheme of Investigation
	<u> </u>





1 INTRODUCTION

1. This document contains the Applicant's responses to submissions by Interested Parties at Deadline 6 of the Norfolk Vanguard Examination.





2 APPLICANT'S COMMENTS ON ADDITIONAL SUBMISSIONS

2.1 National Farmers' Union (NFU)

Written submission

Voluntary Negotiations: NFU and the Land Interest Group (LIG) confirmed that voluntary negotiations are ongoing and that Heads of Terms have been signed by the majority of landowners and occupiers. Copies of a draft Option and Easement have been received but as of the date of the hearing 28th March 2019 no meeting had been arranged with solicitors to progress voluntary negotiations on the documentation.

It was confirmed that a meeting took place with Vattenfall on Friday 22 March 2019 to discuss the issues in the Statement of Common Ground and to discuss their responses.

Applicant's Response The Applicant has now

The Applicant has now received the initial comments on the draft Option and Easement and held a brief conference call with the LIG lead solicitors on the 23rd April 2019. The Applicant will be responding to the initial comments in the week commencing the 29th April 2019 in order to continue to progress negotiations.

Timeline/Timings of Construction: The NFU and LIG confirmed that a detailed response over construction timings has been received from Vattenfall which confirms 2 year pre-construction works, 2 year duct installation and 2 year cable pulling for Norfolk Vanguard followed by a further 2 year cable pulling for Norfolk Boreas. Vattenfall have confirmed that 150m sections will be reinstated of subsoil and top soil. It is understood some areas of haul road, access and areas around the jointing bays will not be reinstated straight away and could be left for long periods during the ducting and cable pulling. The maximum time any land could be out of production would be 6 years for Vanguard but 8 years including Boreas.

Noted.

Link Boxes: The NFU and LIG highlighted that Landowners would like link boxes to be located if possible in field boundaries so that they do not impact on day to day agricultural operations and the responses to the last submission were received from the Applicant:

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.

The Applicant has previously confirmed to the NFU and LIG that the Link Box design that is implemented will be finalised through discussions with the Landowner/Occupier post-consent and once a cable contractor has been appointed.

Manhole covers will be used should this be the landowner's preference. A Cabinet design has been included within the project envelope should there be a preference from a landowner for this design. As the NFU and LIG do not represent all the land interests affected by the proposed cable route, the Applicant has included this design for completeness.



Written submission	Applicant's Response
iii A cabinet design has been included within the design envelope of the ES and this may be preferential to some landowners.	
At the hearing a Vattenfall representative stated that depending on the technical requirements for link boxes it may be preferable by Vattenfall for the link box to be a cabinet and not a manhole cover. NFU and LIG made it clear that the preference of landowners is for manhole covers and no cabinets. This is because cabinets will interfere more than a manhole cover with agricultural operations and there is a greater chance of farm machines and the cabinets getting damaged being located on field margins. If cabinets are going to have to be used landowners need more information now on the location.	
Restrictive Covenants: Vattenfall in the response to the last submission have highlighted: Once the project has been constructed the assets will be handed over to the operator to manage and contact details will be made available to the landowners within 3 months of the OFTO transfer.	Noted. Landowners will be provided the contact details as soon as practicable and within 3 months of the OFTO transfer occurring. During this period, Vattenfall will remain available for landowners to contact.
NFU and LIG believe that it is essential that landowners must be given contact details immediately when the transfer takes place and not within 3 months of the transfer.	
Agricultural Liaison Officer (ALO): Vattenfall have agreed to the wording that NFU and LIG would like to see to cover the role and responsibilities of the ALO but NFU and LIG have yet to see the draft wording incorporated in the draft CoCP.	The updated Outline Code of Construction Practice (CoCP) (document reference 8.01) is provided at Deadline 7.
Agricultural Field Drainage: The wording that the NFU and LIG would like to see being included to cover how field drainage will be treated pre and post construction was detailed at Appendix B of NFU/LIG's last submission and Vattenfall responded "The Applicant is content with the below position and notes that much of this information is already included in the Outline CoCP". NFU and LIG have yet to see the draft wording incorporated in the draft CoCP.	The updated Outline CoCP is provided at Deadline 7.
Soils Management: Vattenfall have responded that "the Applicant will update the CoCP to ensure that the scope of the pre-construction soil survey aligns with the NFU's expectations" and in regard to Soil Surveys and Record of Condition wording the Applicant has stated "it is content with the detail included in the last submission and that this will be updated within the CoCP". NFU and LIG have yet to see the draft wording	The updated Outline CoCP is provided at Deadline 7.





Written submission	Applicant's Response
incorporated in the draft CoCP.	
Compound Sites: The NFU and LIG stated in the last submission that they would like to see specific details recorded in the DCO as to what each compound site/mobilisation unit will be used for. The use will then be binding under the DCO and this will prevent an activity taking place which is not authorised. In response Vattenfall have stated Mobilisation area is fully defined in the draft DCO as "an area associated with the onshore transmission works including hard standings, lay down and storage areas for construction materials and equipment, areas for spoil, areas for vehicular parking, bunded storage areas, areas for welfare facilities including offices and canteen and washroom facilities, workshop facilities and temporary fencing or other means of enclosure and areas for other facilities required for construction purposes," It is the "areas for other facilities required for construction purposes" that is of concern and NFU and LIG request further clarity as to what other facilities may be. Crossing Point Orsted/Vattenfall: The NFU and LIG would like for there to be a commitment that the cables are constructed in a way that will have the least impact on the land. The NFU and LIG have requested information as to what would be the best formation of the cables from Orsted and Vattenfall but this has not yet been provided.	Other facilities could include supporting functions for construction such as wheel wash facilities and vehicle maintenance areas. The crossing point for Norfolk Vanguard and Hornsea Project Three will be managed through a Co-operation Agreement between the projects. This includes principles in relation to construction management and implementation. At the crossing point, one project will install the cables via an open trench method, with the second project installing via trenchless methods. This approach will minimise the impact to the land with only one open trench installation required. Please refer to the Statement of Common Ground between Norfolk Vanguard and Orsted (Rep2 – SOCG – 18.1 Version 2) for details regarding the principles of construction management and implementation (Section 4) and Response to Written
Names of Landoumers hains represented Places ass	Question 1.13.3 provided in Section 6. Noted.
Names of Landowners being represented: Please see separate document submitted to PINS.	Noteu.

2.2 Patricia Lockwood





Please see attached photo of Ivy Todd Farm house and the stream, a tributary of the River Wissey which you walked past along Lodge Road during your recent site visit.

The house is only 9 feet away from the bank of the stream which flooded through the house in 1982.

We are extremely concerned that the applicant will increase the volume of water in this stream as it fills very quickly, after a day or two of continuous rain, as you have already seen from images previously supplied.

Please can the applicant guarantee they will not add any additional run off water, or disturb land drainage or change the water table as this could quickly and easily cause flooding to the house.

Applicant's Response

The design of the onshore project substation will ensure that there will be no increase in surface water runoff from the site, including taking into account climate change, during the operational life of the substation. The climate change allowance incorporated into the design is agreed with Norfolk County Council (NCC) as the Lead Local Flood Authority (see Statement of Common Ground (Rep2 - SOCG - 15.1)).

The project will have no direct impact on the water table and any risk of flooding relates to the increased impermeable surfaces (increased surface water runoff). As described above, the substation operational drainage system will be designed to attenuate the equivalent volume of water that would a occur in a 1 in 100 year rainfall event + an additional 20% to allow for climate change. The principles of the operational drainage plan are provided in the Outline Operational Drainage plan (document reference 8.21) and secured through DCO Requirement 32. This approach has been agreed with both the Lead Local Flood Authority (see above) and the Environment Agency (see Statement of Common Ground (Rep1 - SOCG - 6.1).

As a result of the site selection process undertaken for the Project as described in ES Chapter 4 Site Selection and Assessment of Alternatives, the majority of the onshore cable route is located within an area of low flood risk. Details of the risk of flooding is set out within ES Chapter 20 Water Resources and Flood Risk and Appendix 20.1 Flood Risk Assessment.

Details of the existing land drainage on each land holding will be gathered in consultation with landowners post-consent during the detailed design stage of the Project and drainage plans will be developed to inform the management of land drainage during construction. The services of a suitably qualified drainage consultant will be employed by the Applicant to act as a drainage expert during the detailed design process and to liaise with landowners or occupiers. This commitment is detailed in the Outline Code of Construction Practice (document 8.1)

During construction, the onshore cable route will be bounded by drainage channels to intercept drainage from within the working





Written submission	Applicant's Response
	corridor. Additional drainage channels will be installed to intercept water from the cable trench. A Surface Water and Drainage Plan (SWDP) (Requirement 20 (2)(i) of the dDCO) will be developed, agreed with the relevant regulators and implemented to minimise water within the cable trench and other working areas and ensure ongoing drainage of surrounding land. Following construction, field drainage systems and ditches will be reinstated in consultation with landowners / occupiers. Reinstatement of ditches and culverts that were removed or disturbed during construction would also be undertaken.
Please can the applicant also confirm climate change is fully accounted for too.	Climate change has been accounted for within all relevant topic specific assessments within the Environmental Statement (ES). Section 20.6.5 of Chapter 20 Water Resources and Flood Risk describes the anticipated trends in the existing environment which are taken into consideration within the assessment, including an allowance for climate change. The Applicant's response to the Examining Authority's Further Written Question 2.4 (ExA; FurtherWQ; 10.D4.) details a number of mitigation measures across the project, relating to climate change, including: Embedded mitigation measures in place with regard to climate change and flood risk: • Culverts at water crossings will be adequately sized to avoid impounding flows, including an allowance for potential increases in winter flows as a result of projected climate change. • Cable ducts would typically be installed 2m below the bed of the watercourse, allowing the necessary water volumes and flows, sufficient to account for climate-related changes in fluvial flows and erosion. • Siting of the onshore project substation surface water drainage plan will have sufficient storage / attenuation volume to ensure that during the 1 in 100 year rainfall event, plus an allowance for climate change. • The design of the onshore project





Written submission	Applicant's Response
"Notural England" states "The "act are in the "act	be no increase in surface water runoff from the site, taking into account climate change, during the operational life of the substation. The climate change allowance to be incorporated into the design is agreed with Norfolk County Council (NCC) as the Lead Local Flood Authority.
"Natural England" states "The "nef project" reviews some evidence illustrating the negative impact of localised environmental damage to psychological wellbeing (e.g. areas experiencing intense resource exploitation and people living near toxic waste sites). However, it notes that these impacts are mediated through changes in perceived autonomy and acute sense of loss rather than a direct effect." "Natural England" also states "Most studies, which tend to have considered relationships at a population level, find greater amounts of natural environment around the home has a protective effect on self-reported mental health and is associated with reduced risk of stress, tendency to psychiatric morbidity, psychological distress, depressive symptoms, clinical anxiety, depression and mood disorders in adults." When a population chooses to live in a rural area it follows that they will enjoy the positive impacts of living near natural environments but also a sense of loss when suddenly deprived of such an inherent part of their lives. This gives a potential twofold negative effect on mental wellbeing. Could the applicant show how they have included this sense of loss in their Health Impact Assessment PEIR ch27 please?	There are a number of measures in place to ensure that any disturbance to access to green space and visual impacts are mitigated. This includes a sectionalised approach for the construction methodology which will minimise the temporal disturbance as much as possible, and reinstatement of land and hedgerows where possible following construction. Loss of access to green space is covered in Chapter 30 Tourism and Recreation of the ES. The Applicant has also included a Public Rights of Way (PRoW) Strategy (document reference 8.4) which set out the approach to mitigating potential impacts where PRoWs are temporarily crossed during the works. Additionally, section 27.6.3.4 of ES Chapter 27 Human Health notes: 'During construction, there is the potential for physical activity to be temporarily affected by the project temporarily diverting Public Rights of Way (PRoWs). All other interaction with public spaces such as playing fields and common land has been avoided through site selection as part of the embedded mitigation for the project.' This goes on to detail the potential impacts relating to human health (including mental health). No significant human health impacts have been identified through this assessment. As part of the site selection exercise, detailed in ES Chapter 4, the embedded design principles for all the project components included: avoiding residential areas, avoiding public rights of way and avoiding areas of important habitats. The onshore project substation has been located close to the existing National Grid substation, in an existing arable field which is not currently
	accessible to the public. The introduction of the onshore project substation and the National Grid substation extension will not require any removal of existing woodland. Additionally, along the onshore cable route, impacts to the natural environment will be





Written submission	Applicant's Response
	temporary in nature and, where possible hedgerows will be reinstated following construction.
Although they have detailed their methodology, I am concerned this is wide open to their interpretation to prove that adverse health effects are low. Has the applicant replicated successful historic methodology and investigations regarding Health? As Mental Health and Environment is a current government initiative, Has the applicant taken mental health concerns fully into account using the most up to date methods of investigations?	As noted in Chapter 27 of the ES Human Health (document reference 6.1), there is no defined guidance for assessing health impacts within the context of an EIA. As such, the assessment was conducted using the source-pathway-receptor approach, which allows for appropriate assessment of potential health impacts by identifying a potential source of impact, any receptors to this impact (in this instance, the public, or a certain demographic of the population), and potential pathways to this receptor. Receptors are assessed for their sensitivity, which contributes to the overall assessment of the impact significance. This method identifies any links between the impacts and receptors, and allows for an EIA-assessment that is appropriate to define impact significance. The methodology has used emerging best practice published by the Institute of Environmental Management and Assessment (IEMA), which is in line with guidance provided by the World Health Organisation (WHO and Public Health England (PHE). No significant human health impacts were identified within the assessment.
I am interested in psychology but no expert. There are many scholarly articles which evaluate wellbeing and how the environment effects mental health. One is by Dr Julie Newton. She is jointly funded by Defra and the ESRC. She has commented on an ecosystems approach as provides a useful framework to conceptualise the link between wellbeing and the natural environment. "This is widely recognised as a valuable way to analyse the relationship between people and the environment and for this reason has been endorsed by the Convention on Biological Diversity (CBD, 1992). Humans, with their cultural diversity, are an integral component of many ecosystems" (MEA, 2003: 11). It therefore provides a useful framework to conceptualise the link between wellbeing and the natural environment Has the applicant used an ecosystem approach in their Health Impact Assessment PIER ch27 please?	The ecosystem approach referred to is an approach to providing a framework to conceptualise links between wellbeing and the natural environment, rather than an approach to assessing potential impacts on mental health. The approach has been used to conceptualise the link between mental health and climate change, as well as the general natural environment, and a number of studies use it to detail the link between human health and ecology, a number of which state that climate change is detrimental to mental health. As detailed in ES Chapter 22 Onshore Ecology, and ES Chapter 29 Landscape and Visual Impact, there are mitigation measures in place detailing how any impacts to the ecology or landscape will be mitigated, and are further secured in various plans and within the DCO, including the Outline Landscape and Ecology Management Plan (OLEMS) (document reference 8.7). These measures include reduced working width at hedgerow crossings





Written submission	Applicant's Response
	(from 45m down to 20m) to minimise the extent of hedgerows affected, reinstatement of all hedgerows as soon as possible following construction, and extensive woodland planting in and around the onshore project substation, which will ensure that any disruption to the natural environment is mitigated as far as possible.
	The approach to the Health Impact Assessment is detailed in ES Chapter 27 Human Health.
Can the applicant explain how their project will mitigate their degradation of our land?	Impacts to land are considered in various ES Chapters including Chapter 19 (Ground Conditions and Contamination), Chapter 21 (Land Use and Agriculture), Chapter 22 (Onshore Ecology) and Chapter 29 (Landscape and Visual Impact Assessment). These set out both embedded and additional mitigation measures for the impacts identified therein. These mitigation measures are secured in the DCO and detailed in the Outline Code of Construction Practice (document reference 8.1) and the Outline Landscape and Ecology Management Strategy (document reference 8.7).

2.3 Ray and Diane Pearce

Written submission	Applicant's Response
The property and therefore our Furnished Holiday Let (FHL) business will be affected by the Compulsory Purchase Acquisition (CPA) of the land adjacent to and either side of the B1145. For Norfolk Vanguard & Boreas this will be due South of the property from the crossing point, then west, across the B1145 passing close to our property from the boundary of the CPA land, to the West. Attached maps are provided.	The Applicant would like to bring it to the attention of Mr and Mrs Pearce that the plans attached to their submission are from 2017 and are not representative of the final Land Plans submitted with the Norfolk Vanguard Application as submitted at Deadline 4 (document reference 2.2). The plans attached to the Pearce's submission show the onshore cable corridor bordering the property owned by the Pearce's however the most recent version of the Land Plans as submitted with the application shows the final proposed onshore cable corridor which is situated 100m from the property, with a further residential property located between the onshore cable corridor and their property.
There is a possibility of construction taking up to 4 years whilst construction of both projects continues.	The Applicant is unable to comment on matters arising directly in relation to Hornsea
The CPA of the land for the construction and trenching of the transmission system will affect our business, for an uncertain length of time, as follows:	Project Three, however a cumulative impact assessment has been undertaken for the Project which considers any potential cumulative impacts between the projects.





- o Heavy construction vehicles will enter and utilise the running track in the immediate location of our property.
- o Temporary forward construction compounds for plant and toilet amenities will be located nearby (for Hornsea Three there is a planned compound in direct view from the FHL).
- o Traffic management will be placed along the B1145 on either side, and immediately adjacent to our property.
- o The extent or duration of the traffic management has not been made clear in the CTMP, only that it will take place.
- o Our business will be affected by:
 - Noise from construction traffic, including night transports of indivisible loads.
 - Light pollution from construction works and any construction compounds, including night time headlights lights from vehicles turning off of the B1145 onto the respective running tracks.
 - Dust and dirt from trenching.
 - Mud and dirt from the B1145 being transposed onto our access track and flint walled boundaries.
 - The visual amenity of the holiday let, across the fields of Norfolk will be denied.
 - The visual amenity will also be affected for years.

Applicant's Response

With reference to Appendix 24.7 of Chapter 24 Traffic and Transport of the ES, traffic movements along the running track from the B1145 crossing east of Reepham (Section 9a) will be required for approximately 19 weeks to complete duct installation of cable route Section 9a from that location.

The extent and duration of the temporary traffic management of the B1145 to allow ducts for Norfolk Vanguard and Norfolk Boreas to be installed within the carriageway will be developed through detailed design post consent and included in the final Traffic Management Plan for approval by the relevant planning authority in consultation with the highway authority, as secured in DCO Requirement 21. However, the duration is likely to be less than 1 week in duration with temporary one-lane traffic control.

The Applicant is not proposing the transport of any indivisible/abnormal loads at any time in this area. Abnormal loads will only be required as part of construction of the onshore project substation near Necton as outlined in the Outline Traffic Management Plan (TMP) under Section 1.6.6.

All transport movements will be conducted within the Delivery Periods secured within the OTMP at Section 1.6.5 and will not be later than 7pm in the evening.

Site lighting will be subject to an Artificial Light Emissions Management Plan in accordance with Requirement 20(2)(c) of the DCO and submitted to the local authority for approval prior to construction. The plan will include details of the location, height, design and luminance of all floodlighting to be used during the construction of the project, together with measures to limit obtrusive glare to nearby residential properties as outlined in Section 3.7 of the Outline Code of Construction Practice (OCOCP).

Control measures for dust management are outlined in the OCoCP at Section 10 to mitigate such risks. Furthermore, this section of the OCoCP includes measures specific to earthworks to minimise trackout, such as wheel wash facilities prior to the site exit.

With reference to Chapter 29 Landscape and Visual Assessment of the ES, the visual impacts of the construction works in this area will be short term and reversible in respect of





Written submission	Applicant's Response
	onshore cable route construction and medium term and reversible in respect of the reinstatement of hedgerows (not significant). Localised significant cumulative effects lasting the short term of overlapping construction phases, reducing to not significant post construction, could occur should the Norfolk Vanguard and Hornsea Project Three crossing be conducted at the same time.
 Our business will cease during the on-shore construction period, for the following reasons: Our FHL business contracts it's marketing to an Agent. We are duty bound to inform the Agents when we have knowledge that construction will commence, which will curtail our income and forward bookings as any marketing will cease. In any direct marketing from ourselves, we will be morally obliged to notify prospective clients of any impending construction works. Should any holiday makers actually reside in the property during any works, they will be affected by 	The Applicant is in the process of arranging a meeting with the Pearces to discuss their concerns in more detail. Please refer to Applicant's response to Q18.27 of the Examining Authorities Further Written Questions (ExA; FurtherWQ; 10.D4.6) which details how construction impacts on a single location will be limited to short periods within the overarching 6 year programme as a result of the sectionalised duct installation and subsequent cable pulling construction methodology.
noise, light pollution, physical pollution and disruption as described previously. - Disrupted and disturbed clients and would likely be able to claim compensation from us. Our property is within the blight area of the application and, from a recent valuation, is some 30% below its previous market value.	The Applicant notes that the impact from the Norfolk Vanguard project will only be temporary in nature during the construction of the particular sections of the project in the vicinity of the property. Therefore the Market Value of the property will be unlikely to be affected permanently.
We would like to understand how the CPA of the land for the crossing point, to the south of the B1145, will be managed as it will effectively be acquired for use by potentially two Companies.	Embedded mitigation by the Project in relation to the sectionalised approach for the construction of the onshore cable corridor reduces the length of the construction period at each section. In the event that a voluntary agreement cannot be entered into with the relevant landowner, the compulsory acquisition of new rights and imposition of restrictive covenants can co-exist for Hornsea Project Three and Norfolk Vanguard and this is regulated through the Co-operation Agreement. Refer to the Statement of Common Ground between Norfolk Vanguard and Orsted (Rep2 – SOCG – 18.1 Version 2) for details regarding





Written submission	Analisanda Danasana
I Writtan siinmission	Applicant's Response

Do we own any of the land subject to CPA?

- Answer – No but the land in question immediately abuts our boundary.

As the Applicant has responded above, the plans included with the submission do not show the current onshore cable corridor alignment and therefore the cable corridor no longer abuts the boundary of the property.

Relevant compensation claim. Broadly such claims can be made by persons or organisations whose land or whose rights in land could be affected by the Proposed Development. Their land or rights may not be subject to Compulsory Acquisition powers sought in the application or indeed be within the land to which the application relates, but they may have a right to compensation under either Part 1 of the Land Compensation Act 1973, s10 of the Compulsory Purchase Act 1965, or s152 of the Planning Act 2008, if their land or interest is affected by the Proposed Development.

- Under Part I of the Land Compensation Act 1973 ('the Act'), compensation can be claimed by people who own and also occupy property that has been reduced in value by more than £50 by physical factors caused by the use of a new or
- The physical factors are noise, vibration, smell, fumes, smoke and artificial lighting and the discharge on to the property of any solid or liquid substance.

longer abuts the boundary of the property.

The Applicant is in the process of arranging a meeting with the Pearce's to discuss their

concerns in more detail.

Applicant's Response

Unfortunately the Applicant understands that the property would <u>not</u> be eligible for compensation through the Land Compensation Act 1973 or the Compulsory Purchase Act 1965.

Notwithstanding this, the Applicant would suggest that independent advice is sought from a Compulsory purchase Surveyor. The RICS offers a free 30 minute hotline for people affected by compulsory purchase projects and a suitable Chartered Surveyor would be recommended.

2.4 Royal Society for the Protection of Birds (RSPB)

2.4 Royal Society for the Protection of Birds (RSPB)

Collision risk

Written submission

altered road.

We welcomed the opportunity to discuss the collision risk modelling (CRM) parameters with the Applicant and Natural England ahead of the Issue Specific Hearing. As a result, there are only a limited number of outstanding points on which agreement has not yet been reached.

These include:

The Applicant is very grateful to the RSPB for meeting in advance of the Issue Specific Hearing and engaging in constructive discussions on the ornithology assessment. This has enabled considerable progress to be made towards resolving remaining outstanding issues between the RSPB and the Applicant.

• The avoidance rate used for gannet in the breeding season. Avoidance rate is a correction factor added to CRM to account for sources of error and variability in the model in addition to avoidance behaviour in birds. We agree with SNCB advice (2014) regarding appropriate avoidance rates, except for gannet in the breeding season. The RSPB advocates a rate of 98% as the evidence for the SNCB agreed avoidance rate is almost entirely derived from non-breeding season birds, as acknowledged by the review the guidance is drawn from (Cook et al., 2014). The Applicant has cited Skov et al (2018) and Bowgen and Cook, (2018) as evidence that the avoidance rate should be higher. These reports are derived from a single study (the ORJIP Bird Collision Avoidance study) where the majority of the gannet activity was outside the breeding season and was compromised by

The Applicant acknowledges the RSPB's position on the use of 98% for the gannet collision avoidance rate during the breeding seasons. This rate is not supported by the available evidence for this species, nor is it the rate recommended by Natural England (and the other Statutory Agencies), which is 98.9%. The Applicant has therefore presented collision estimates for gannet using the Natural England advised rate and considers this to be the most appropriate (and precautionary) rate to use.





Written submission	Applicant's Response
the presence of fishing vessels just outside the windfarm, which would have influenced the behaviour of gannets. Due to this, we would not include this study as an argument for increasing the avoidance rate. We therefore request that the collision risk modelling outputs for gannet include 98% in the breeding season (alongside the SNCB recommended 98.9%).	
The RSPB would like to see potential mitigation by raising the lower tip height of the rotors from 22.5m to 35m as at Hornsea Three. Raising the lower tip height will significantly reduce the collision risk. We have asked for this measure to be modelled.	The Applicant has considered options for mitigating collision risks, and this has resulted in a review of the design layout and a consequent average reduction in predicted collision mortality of 34% (ExA; CRM; 10.D6.5.1). This further reduction in the Project's potential impacts consolidates the assessment conclusions that the project alone presents no risk of significant collision impacts and that adverse effects on integrity (AEoI) of Special Protection Areas (SPAs) due to collision risk can be ruled out.
We also seek clarity on the final figures to be used as the basis for assessing impact significance or determining the existence of adverse effects on the integrity of European sites – these assessments should be based on the parameters recommended by Natural England. Otherwise the RSPB are in agreement.	The figures for assessment will be submitted at Deadline 7 (ExA; AS; 10.D7.21), which include reductions due to removal of the smallest turbine (9 MW) from the design envelope and mitigation through a confirmed revision to the layout between the East and West sites.
We welcome the increase in the minimum turbine size from 9MW to 10MW. We would expect this to result in reductions in collision risk, but as there are several turbine parameters which will influence the degree to which the collision risk is reduced, it is premature to predict the level of reduction.	The Applicant can confirm that the move from a design using 200 9MW turbines to 180 10MW turbines reduced the collision risk for the Project by approximately 10%. Furthermore following the layout design revision (ExA; CRM; 10.D6.5.1) the collision risk was reduced on average by an additional 34% (across species).
The parameters in collision risk modelling are largely evidence based. Some are peer-reviewed like Nocturnal Activity Factor (NAF) for gannet, whilst others, such as NAF for kittiwake are based on the Applicant's own work. There does need to be an element of peer review in setting the parameters, but this does not necessarily need to be formal due to time constraints, but we note that the gannet NAF was adjusted following peer review.	The Applicant largely agrees with the RSPB about the parameters discussed. However, the Applicant does not consider that the previously advised NAF values for all species (on a 1 to 5 scale from 0 to 100%) were strictly evidence based, and in fact the original source for these estimates (Garthe and Hüppop 2004)* has been misinterpreted as the values were intended as a comparative scale (Stefan Garthe, pers. comm), not a guide to absolute values as has been the case in the Band (2012) Collision Risk Model.
	* Garthe S. & Hüppop, O. 2004. Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index. Journal of Applied Ecology,





Written submission	Applicant's Response
	41, 724–734.
We know that density dependence occurs in populations, and whilst this does provide contextual information, we do not have firm evidence about its direction and form to enable it to be included in population viability analysis (PVA). The strength and form of density dependence is not just species specific but is also colony-specific in relation to local conditions. This has been a topic through a number of examinations – firstly at Hornsea One. Subsequent to this examination, the Joint Nature Conservation Committee commissioned a review which recommended the use of density independent PVA (Cook and Robinson 2016). A subsequent Marine Scotland Science commissioned review also recommended the same approach (Jitlal et al., 2017). Furness et al. 2013 recommended the use of density independent PVA outputs, saying "In such circumstances the most robust approach is to avoid the temptation to include density dependence, since it is often based on the premise that 'it must be operating therefore it must be included', even if the mechanism is unknown" and there has been no new evidence describing density dependence with sufficient accuracy to include in models since then. The use of density independent PVA does not directly affect the collision risk modelling outputs, rather it informs the interpretation of the population scale impact of those outputs. It should also be noted that, whilst the use of density independence in PVA can be considered precautionary, the worst-case scenario would be the existence of depensatory density dependence within the population. In conclusion, following discussion with the Applicant prior to the hearing, the RSPB are content with the parameters proposed for use in the collision risk modelling (with the exception of the gannet breeding season avoidance rate).	The Applicant acknowledges the challenges in estimating density dependence in seabird populations as identified by the RSPB. However, while there has been no new empirical work to inform this aspect this does not prevent exploration of alternative methods for simulating density dependence in PVA models. This has been presented for previous modelling work for many of the populations relevant to the current assessment and has identified robust parameter estimates which balance the understanding of seabird population dynamics with the need for precaution. Nevertheless, all PVA to which the Applicant has made reference has been presented as both density independent and density dependent forms of the model, to enable the differences in predictions to be seen. The Applicant considers this to be an appropriate way to ensure uncertainty in these matters can be taken into account.
Displacement	
The RSPB is reasonably confident that it will be content with the displacement and mortality rates for the red-throated diver displacement assessment, based on the discussions with the Applicant prior to the hearing.	The Applicant acknowledges and welcomes the RSPB's position on this matter.
In relation to operational displacement rates for auks at Flamborough and Filey Coast SPA the RSPB wish to highlight that the higher range values should not be seen as a maximum or worst-case scenario, but rather part of a range where both higher and lower mortality rates are possible. The RSPB are content with the cumulative displacement	The Applicant acknowledges the RSPB's position on this matter.
assessment for gannet following the meeting with the Applicant prior to the hearing.	
Apportioning of impacts to SPAs	
The approach to apportioning was discussed prior to the hearing in the meeting between the Applicant, Natural England and RSPB. However, details in relation to the apportioning of lesser black-backed gulls to the Alde-Ore Estuary SPA and kittiwake of Flamborough and Filey Coast	The Applicant acknowledges the RSPB's position on this matter.



Written submission	Applicant's Response
SPA are still awaited. The RSPB welcome the consensus- seeking approach of the planned call between the Applicant, Natural England and the RSPB early next week. The RSPB note that more concerns might arise when we see the workings of the apportioning approaches. For kittiwakes in the breeding season, we welcome the use of the RSPB tracking data and hope we can reach agreement	The kittiwake tracking study conducted by the RSPB has provided valuable new information
on the apportioning approach. However, we are concerned with the assumption of a 250km maximum foraging range given that the current maximum foraging range is 350km and is based on recent tag recoveries. We queried how the 250km has been calculated and the justifications for its use. Following discussion, the RSPB welcomes the agreement to use a range of values for maximum foraging range. The 2017 kittiwake tracking data was a small sample for one season however two birds flew into the Norfolk Vanguard area and some birds went further than that and therefore birds are likely to do so again. The tracking method used is different from previous studies due to advances in technology and much lighter remotely downloadable tags that can be attached for longer using a different attachment method. Previous data was based on birds tracked for four days because of the need to recapture the bird to retrieve the data. With the new tag there is no need to recapture so birds can be tagged for longer further into the season when they forage further as the chicks grow – the foraging range increases throughout the season.	on the foraging range for this species. However, as noted by the RSPB this was a small study and to date only one year has been reported on. Therefore, the results of this study should be considered alongside other studies on this species conducted elsewhere. The Applicant has used these data to inform the method of apportioning collisions to the Flamborough and Filey Coast SPA population, and this has been used in the updated assessment submitted at Deadline 6 (ExA; AS; 10.D6.17). The value of 250km referred to by the RSPB relates to the proposal (discussed with the RSPB and Natural England at a meeting immediately before the ISH) to assume breeding season connectivity with wind farms within this distance from the Flamborough and Filey Coast SPA in the in-combination assessment. Following the discussions with the RSPB and Natural England, this approach was revised for the assessment submitted at Deadline 6 (ExA; AS; 10.D6.17), with connectivity for other wind farms instead based on estimates presented in the East Anglia THREE assessment (as advised by Natural England).
RSPB agree the need to discuss how to account for the proportion of nonbreeding birds at Norfolk Vanguard. The Applicant has suggested using the BDMPS for spring passage period. We agree there is merit in this for the spring but not later in the season when birds forage further.	The Applicant acknowledges this position from the RSPB which was used to inform the assessment submitted at Deadline 6 (ExA; AS; 10.D6.17).
Following a discussion of how kittiwake foraging distance varies throughout the breeding season, the RSPB agreed to check the timing of the flights that went into the Norfolk Vanguard sites.	The Applicant has not received any further information on this aspect from the RSPB to date, which it is presumed will be submitted at Deadline 7.
Other submissions from the Applicant for Deadline 6	
The RSPB is happy with the approach being proposed for non-seabird migrant collision risk modelling.	The Applicant acknowledges the RSPB's position on this matter, and also notes that the update of this assessment, addressing aspects raised by Natural England, was submitted at Deadline 6 (ExA; AS; 10.D6.18).





In relation to the assessment combining collision risk and displacement effects for gannet from Flamborough and Filey Coast SPA, the RSPB agreed with Natural England that collision and displacement are not mutually exclusive. Sublethal displacement effects do not preclude subsequent lethal collision effects. There is a need to combine lethal and nonlethal effects and we welcome the inclusion of this in the assessment.

Applicant's Response

The Applicant acknowledges the RSPB's position on this matter and this combined assessment was provided at Deadline 6 (ExA; AS; 10.D.6.17).

Mitigation

In relation to raising turbine heights it is understandable that the Applicant wants to wait to consider the merits of changing the height, but it is useful for context to understand how the permutations would work. We queried whether there is any reason why they should not raise the height. Generally, the wind profile is better with higher turbines. The Applicant should potentially consider a range of heights: East Anglia THREE was limited to raising height by 2m due to radar issues but Hornsea Two raised its turbines by 10m. In terms of collision risk modelling, we would like to see a range of heights included up to 35m, but the Applicant could focus this on the species of greatest concern – gannet, kittiwake and lesser black-backed gull.

The Applicant acknowledges the RSPB's position on this matter and has taken steps to reduce the predicted collision mortality as requested. On the basis of the further reductions in collision risk following the removal of the 9MW turbine from the design envelope and the commitment to a revised layout (ExA; CRM; 10.D6.5.1) the Applicant considers that the impacts from the project alone are at a level where significant impacts can be ruled out and there will be no AEol. Thus the Applicant has already made considerable progress on impact mitigation.

Red-throated diver displacement

In relation to red-throated diver, there is evidence of a 94% displacement rate from offshore wind farms. We therefore do not consider 90% can be considered to be a maximum, but we agree that adjusting this rate will not have that much effect. The percent mortality is something of a "fudge" for a range of effects on body condition, breeding success, chick survival and their own survival. There is significant uncertainty and we agree with Natural England that a range of percentages for mortality should be provided.

The Applicant acknowledges the RSPB's position on this matter. Evidence in support of the Applicant's approach to this assessment was provided at Deadline 1 (ExA; WQApp 3.1;10.D1.3) and assessment using the rates advised by Natural England was also presented.

Cumulative and in-combination effects

The RSPB agrees with Natural England's concerns regarding the baseline data for Hornsea Three and support their recommended approach to use of the Hornsea Three figures in the cumulative/incombination assessment.

The Applicant acknowledges the RSPB's position on this matter which has been addressed by providing assessment both with and without the figures for Hornsea Project Three in the assessment at Deadline 6 (ExA; As; 10.D6.17) and the same approach will be used for the updated assessments to be submitted at Deadline 7 (ExA; As; 10.D7.21).

Monitoring

In terms of monitoring, both strategic and site-specific approaches are required. We welcome strategic work, to which the Applicant and its consultants have contributed. But site-specific monitoring is important as we are increasingly realising that there is local variability.

The Applicant acknowledges the RSPB's position on this matter.

The In Principle Monitoring Plan (IPMP) (document 8.12) provides the framework to agree monitoring with the Marine Management Organisation (MMO). The IPMP does not rule out the potential of project specific monitoring, although acknowledges that strategic monitoring may be more





Written submission	Applicant's Response
	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)(I).
Final points	
The RSPB is grateful that significant progress is being made on methodological concerns. However, our concerns regarding impacts on Flamborough and Filey Coast SPA and the Alde-Ore Estuary SPA will remain until we can examine the documents to be submitted by the Applicant at Deadline 6. We agree with Natural England's position regarding the significant cumulative and in-combination impacts and therefore encourage a prudent approach to mitigation options including raising turbine hub height and maximising relative turbine numbers in Norfolk Vanguard West as opposed to Norfolk Vanguard East to reduce impacts.	The Applicant acknowledges the RSPB's position on these matters, and also the assistance provided by the RSPB to the Applicant in finding means to resolve them. Much of this work is included in the Applicant's submissions at Deadline 6 (ExA; AS 10.D6.15, ExA; AS 10.D6.16, ExA; AS 10.D6.17) and at Deadline 6.5 (ExA; CRM 10.D6.5.1) and in further submissions to be provided at Deadline 7.

2.5 Trinity House

Written submission	Applicant's Response
Trinity House (TH) raises points on arbitration in relation to the Applicant's current drafting at Article 38 and confirms their acceptance to the wording at Article 38 of the revised draft (version 4) DCO.	The Applicant welcomes Trinity House's confirmation that the revised drafting in Article 38 is agreed in principle.
TH raises concerns regarding consistency between offshore wind scheme projects and TH append examples from other projects to their submission.	The Applicant complies with the general themes and approach of the Standard Navigational Conditions (as submitted by the MMO at Deadline 6) save that the Applicant's DML goes beyond the general conditions and provides further commitments and project specific references.
	The Applicant understands that the MMO has stated they are reviewing consistency and will respond at Deadline 7. The Applicant is willing to consider points relating to consistency if these are put forward by the MMO, but is currently satisfied that the DMLs are drafted appropriately bearing in mind the bespoke matters agreed for Norfolk Vanguard and the drafting conventions of a statutory instrument, which do not apply to Marine Licences.
	It must also be remembered that each project is different and that there may be slight variations in approach which require different drafting to be adopted in the DMLs. Therefore consistency should be considered with a note of caution because it may not be appropriate





Written submission	Applicant's Response
	or necessary to align the DMLs with those proposed for other projects in all cases.
TH questions why the conditions in relation to traffic monitoring where not included in Schedules 11 and 12 of the dDCO.	The Applicant has added wording suggested by Trinity House within the dDCO (document reference 3.1) to Condition 19(4) and Condition 20(2)(d) in Schedule 9 and 10.
	The Applicant does not consider that the Transmission DMLs need to include any further wording. This is supported by the MMO in their Deadline 6 submission which, at paragraph 4.4, states that:
	The MMO believe these [additions to the navigation] conditions do not need to be added to Schedule 11 and 12 as there are less traffic risks from the cables installation. In addition to this the infrastructure that does exist will be inside the windfarm array area and will be captured by the generation asset monitoring.
TH opposes the Applicant's proposal to include a deemed discharge provisions in the DMLs	The Applicant refers TH to the Applicant's Written Summary of ISH5 (document reference ExA;ISH5;10.D6.10) and ISH7 (document reference ExA; ISH7; 10.D7.2) which responds to these points.
	The Applicant has taken on board TH's and the MMO's comments at ISH7 and inserted a bespoke process for appeal in the event of non-determination or refusal. This is explained further in the Applicant's Written Summary of ISH7 and is captured in the Applicant's revised dDCO submitted at Deadline 7 (document reference 3.1 (version 5)).

2.6 Highways England

Written submission	Applicant's Response
Highways England are awaiting submission of the A47 Cable Crossing Access (North-West of Scarning) Technical Note (CCATN).	This was provided to Highways England on 17.04.2019. The Applicant has committed to engage with Highways England and to provide an update of areas of agreement / disagreement to the examination by Deadline 8. See also Unresolved Traffic Matters with Highways England Position Statement submitted at Deadline 7 (ExA; ISH6; 10.D7.4).
Substation Access Clarification Technical Note (SACTN)-dated	The Applicant has now received BN07 from





Written submission	Applicant's Response
12 March 2019. Review completed. Highways England intend to issue another Briefing Note (BN07) formally responding to the SACTN shortly after Deadline 6.	Highways England and a copy has been submitted to the examination at Deadline 7 (ExA; ISH6; 10.D7.4). In summary, Highways England agree in principle to the details set out in the SACTN.
A47 Substation Access A and D1. Following DMRB technical review of the substation access options A and D1 option, we issued a briefing note, which will be updated within BN07.	The Applicant has now received BN07 from Highways England and a copy has been submitted to the examination at Deadline 7 (ExA; ISH6; 10.D7.4). In summary, Highways England agree in principle to the details set out in the SACTN.
A47 sensitive junctions. Highways England agrees in principle that impacts at these locations can be addressed through the final Traffic Management Plan to be produced post-consent. Highways England anticipates that details of the Applicant's response to these issues will be incorporated in an updated Outline Traffic Management Plan.	The Applicant has incorporated the majority of the measures requested by Highways England within the Outline Traffic Management Plan submitted at Deadline 7 (document 8.8 version 2). Further engagement will be undertaken between the Applicant and Highways England to resolve the remaining unresolved item which will be captured in a further update to the Outline Traffic Management Plan to be submitted at Deadline 8. A position statement has also been submitted at Deadline 7 (ExA; ISH6; 10.D7.4).

2.7 North Norfolk District Council

Written submission	Applicant's Response
Potential options for re-using clean spoil at Cart Gap. The position agreed between the parties is that the use of clean spoil from the project in relation to coastal defence matters at Cart Gap can be explored further outside of the DCO process.	This aligns with the position statement submitted by the Applicant at Deadline 6 (ExA; ISH4; 10.D6.8).
Coastal Erosion – Requirement Relating to Monitoring. The parties agree that it would be appropriate to include a requirement to monitor the landfall site within the DCO. The proposal by the Applicant to monitor the rate of coastal erosion is welcomed and, following recent discussions that have taken place, NNDC are advised by the applicant that changes and additional text are proposed to be added to Requirement 17 (landfall method statement) to cover a monitoring requirement.	The revised wording for DCO Requirement 17 included within the version of the DCO submitted at Deadline 6.5 includes the agreed wording between both parties for Requirement 17.
Proposed text has been shared with NNDC and has been agreed by both parties	
Noise – Start Up and Shut Down; HGV Waiting Areas. The Applicant has indicated to NNDC that it will adopt the same approach as Hornsea Project Three. The Applicant has indicated that the changes will be captured within an update to the Norfolk Vanguard outline Code of Construction Practice and outline Traffic Management Plan as appropriate.	This aligns with the position statement submitted by the Applicant at Deadline 6 (ExA; ISH4; 10.D6.8). An updated outline Code of Construction Practice and an updated outline Traffic Management Plan, capturing these updates, have been submitted to the examination at Deadline 7 (document





Written submission	Applicant's Response
WITCH SUBILISSION	references 8.1 (version 2) and 8.8 (version 2), respectively).
Following a teleconference to discuss outstanding matters between the Applicant and NNDC, the Applicant has agreed to provide the following information to NNDC: • Little London – more of a bespoke detail of additional standard and enhanced mitigation and best practical means in relation to works in this area; • Happisburgh – more of a detailed note on the impacts of noise at landfall including setting out mitigation proposed; and • Details of upgraded fencing for compounds for the purpose of noise mitigation.	The Applicant has provided two documents directly to NNDC: • A note setting out the potential for 24 hour working at the landfall and associated noise impacts, which was previously submitted to the examination at on 19th February 2019 (ExA;AS_ISH1 Action;10.D3.7). • A note describing the approach to construction noise mitigation and the use of barriers (fencing) as described within ES Chapter 25 Noise and Vibration and captured within the outline Code of Construction Practice (document reference 8.1). A note setting out the impacts and mitigation associated with Little London Road — specifically pedestrian amenity impacts along Little London Road and the approach to mitigation has been submitted to the examination at Deadline 7 (ExA; ISH6; 10.D7.8) and also shared directly with NNDC.
NNDC provide further evidence to demonstrate that tourism within Norfolk is less seasonal than has been assumed and that impacts have been downplayed on the basis that they are short-term. NNDC consider that addressing the impacts on tourism and related businesses needs to be included within the DCO Requirements and provide suggested wording for such a new Requirement.	Tourism impacts are considered in full within ES Chapter 30 Tourism and Recreation. The location of the landfall and onshore cable route have been designed to avoid the high value tourism assets of the Norfolk Coast AONB and the Norfolk Broads National Park. In addition, a long HDD has been selected at the landfall to avoid the need for closures of the coastal path and the beach at Happisburgh. The landfall works comprise the largest construction presence in North Norfolk and will be located in proximity to the coastal path. The drilling duration for the installation of ducts at the landfall under the worst case assumptions is 20 weeks. This assumption does not include 24 hour working which would reduce total duration to 14 weeks. With appropriate mitigation measures in place, there are no noise and vibration impacts anticipated as a result of these works at the nearest receptors. Due to the presence of a temporary works site at the landfall there is anticipated to be temporary disturbance of low magnitude to the tourism and recreation assets in the immediate vicinity of the landfall due to traffic





Written submission **Applicant's Response**

and visual disruption. The impacts are localised, short term and reversible. The sensitivity/value of the receptors are medium (regional importance) and the magnitude of effect is low (works are visible from the tourist attraction but there are no direct impacts.) representing an impact of minor adverse significance.

On this basis the Applicant has not identified any necessity for further mitigation, beyond the measures committed to reduce potential noise and traffic impacts to non-significant levels for the duration of the works.

The Applicant and NNDC are continuing to engage on this matter and will set out a final position at Deadline 8.

NNDC have discussed a range of issues with the Applicant including matters relating to Replacement Landscaping. In particular, discussions have focussed on trees that may be lost along the route of the onshore cable which cannot be avoided through micro-siting and which cannot be avoided through use of HDD. The Applicant has indicated that the use of HDD will not be likely to avoid single trees and this raises the possibility of a net loss of biodiversity where trees are not to be replaced.

NNDC have asked the Applicant to confirm the maximum number of trees with the potential to be lost along the cable route. There is the potential to explore whether replacement planting can be secured within 'temporary' rather than 'permanent' land take areas or with agreement of landowners outside of the DCO

Hedgerow and tree mitigation is set out in ES Chapter 22 Onshore Ecology and captured within the outline Landscape and Ecological Management Strategy. All unsurveyed hedgerows within the onshore project area will be subject to a hedgerow survey prior to construction. In addition, a pre-construction walkover survey of the whole route will also be undertaken by an appropriately qualified arboriculturalist. This survey will identify the location of all mature trees to feed into the micrositing of the cable route during construction.

The Applicant has committed to seeking to avoid mature trees during construction where possible through micrositing the cable route in order to retain as many trees as possible. To assist with this the Applicant has committed to a reduced working width at hedgerows (reduced from 45m down to 20m). However, it is not possible to replace trees within this 20m gap as this would be above the operational cables.

Overall Norfolk Vanguard will result in a net gain of trees and hedgerows as a result of the planting proposals at the onshore project substation. Where trees are lost along the cable route the hedgerow will be replaced, which will reinstate the ecological functionality of that hedgerow.

The Applicant and NNDC are continuing to engage on this matter and will set out a final position at Deadline 8.

2.8 Colin King





I disagree with Vattenfall's opinion that Earth banks would not fit into the existing topography, as we already have mounds of trees on the horizon. If the banks were over half the height of the halls, there would be a degree of instant mitigation, and then as the years pass, there would be hope, as the trees grow, the view would get better with the possibility it could be totally hidden, and blend in.

Vattenfall visited the farm on the 25 Jan 2018 and took photographs from the same spot as these photos, I presumed to form a simulation montage to gauge the impact on us, but I have not seen any results.

Applicant's Response

A detailed landscape and visual impact assessment is presented in ES Chapter 29. Significant effects associated with the operation of the onshore project substation would be experienced by walkers on Lodge Lane to the immediate south of the site, and by road-users on a very localised section of Ivy Todd Road to the south-west and a section of the A47 to the north. These effects would only occur within approximately 1.2km of the onshore project substation, making them localised. There would be no significant effects on the views of residents at Ivy Todd and Necton.

Extensive landscape planting and earthworks will be implemented on the sites of the onshore project substation, National Grid substation extension and around the new A47 junction, in order to mitigate localised effects. Landscape planting would comprise mostly woodland planting that would grow to screen or partially screen the onshore components and associated infrastructure of the project. Localised visual impacts from these three locations would be mitigated over time as woodland planting establishes and matures.

The inclusion of earth bunds has been considered in the assessment, although any potential bunds must be limited to no greater than 2m in height to ensure they are stable and can be well-integrated within the local landscape.

To introduce 10m high bunds would require significant additional land take and a significant amount of imported fill to create.

For example a 250m long by 5m wide bund at 10m high would require a 65m x 250m footprint to ensure safe 1 in 3 slopes. To include one on each side of the onshore project substation would represent 6.5ha (16 acres) of additional land take. This would create a major change to the local landscape of this area and could pose a health and safety risk owing to potential in stability.

The volume of imported fill to create these bunds would be approximately 350,000m³, which would equate to an additional 29,000 HGV deliveries or 54,000 HGV two-way movements to Necton, based on a standard HGV load of 12m³.





Consultation and alternatives considered. As the consultation was conducted, the actual opportunity to influence the site position was to verbally, or write on a post it our preferred site, all within 3 adjoining fields, all basically the same place. This seems that this has been judged the absolute minimum required as far as alternative sites, and taking notice of people's opinions in the consultation is concerned, and to tick those boxes. There were no photo montages made of the options, just blocks on a map for residents to make a fast, and uninformed decision. I wonder now that the intention of the planning act, requiring a demonstration of alternatives, was to be a much more useful part of the consultation process, where a true alternative like Top Farm, or the Scarning site, or both should have been looked at in parallel with Lodge Farm, to demonstrate advantages and disadvantages, with photo montages for residents, and the applicant to compare. This would of had true value, and I and others would not feel as ignored, useless, and that the site had not been initially chosen in haste with no turning back.

Applicant's Response

Chapter 4 of the ES describes, in detail, the process of site selection. With respect to the onshore project substation, Appendix 4.9 details the step-by-step process for the site selection.

Within this document, the process of determining the four potential locations is set out, describing the various 'layers' which were used to rule out areas which had environmental constraints. This included residential and noise buffers, avoidance of high risk flood zones, avoidance of listed buildings and cultural heritage, ecological buffers, and LVIA constraints. The resulting 'available' areas were then offered for consultation to choose a final suitable location for the onshore project substation.

The process of identifying the most appropriate location to site the onshore project substation took into account the National Grid guidelines on substation siting and design (Horlock Rules), extensive preapplication engagement over a 20 month period with stakeholders, communities and landowners (as detailed in the Consultation Report) and taking forward, within a 3km search area, those areas with fewer environmental constraints.

Previous responses to submissions by interested parties as well as responses to questions raised by the Examining Authority have set out reasons why the Top Farm and Scarning sites were unsuitable locations (see q2.1 of the Applicant's responses to the Examining Authority's Written Questions (WQs) (ExA; WQ; 10.D1.3) and the Applicant's responses to Written Representations (WRs) (ExA; WRR: 10.D2.2).

2.9 Marine Management Organisation (MMO)

Written submission	Applicant's Response
MMO's Summary of oral cases made during ISH4	
Marine mammals	The Applicant welcomes the update from the
The MMO provided an update on the Southern North Sea Special Area of Conservation (SAC) underwater noise regulator group. The MMO explained the group had laid out the terms of reference and advised there would be stakeholder consultation on the proposed mechanism in quarter 3 2019, with the intention to provide the response in	MMO and agrees that the current requirement for a Site integrity Plan (SIP) is likely to be sufficient to allow any mechanism to be fully incorporated without need for variation.





Written submission	Applicant's Response
quarter 4 2019. This might be in time for the Secretary of	
State (SoS) to take into account when making a	
determination.	

If the decision occurs prior to a mechanism being defined, the MMO considers that, under the Marine and coastal Access Act 2009 (MCAA), it would be able to vary the Deemed Marine Licences should such a variation be deemed necessary. However the current requirement for a Site integrity Plan (SIP) is likely to be sufficient to allow any mechanism to be fully incorporated without need for variation.

Haisborough, Hammond and Winterton (HHW) Special Area of Conservation (SAC) Site Integrity Plan (SIP)

The MMO advised that from the discussion in the ISH they were content with the list of proposed content, subject to review of the outline SIP.

The MMO disagrees with the need for the condition to be included within the DCO. The MMO notes the applicant's comments that the adverse effect on integrity (AEOI) is an issue in relation to the Southern North Sea SAC where the MM SIP has been implemented through a condition. The same approach has been taken for the HHW SIP.

In response to these comments the MMO would highlight the MM SIP is in place due to the uncertainty of the incombination aspects of multiple projects creating underwater noise. This is outside the scope of this project and cannot be considered in detail within the National Significant Infrastructure project (NSIP) process.

While the MMO understands the uncertainty of the cable route and volumes, the MMO do not think it is comparable to the MM SIP. The MMO believe it is possible to present a worst case scenario informed with updated data to undertake an HRA to conclude if there is AEOI due to the cable protection within the HHW SAC. This impact should be assessed alone, and with any in-combination aspects allowing a decision to be made. The MMO, therefore, questions if it is appropriate for this process to be deferred to post consent. This would lead to looking at other options through the HRA process such as alternatives or compensation which may cause a high risk to the development and a major financial burden to the applicant. However, the MMO will defer to the advice of the SNCB with the information supplied and the assessment to be made during this application process.

As discussed during Issue Specific Hearing (ISH6) and reflected in the Applicant's Written Summary of Oral Submissions: ISH6 – Environmental Matters (document reference ExA; ISH6; 10.D7.1), the Applicant maintains that a SIP condition would be advantageous for all parties due to uncertainty regarding the following:

- The extent and location of Annex 1 reef feature due to the ephemeral nature of Sabellaria spinulosa
- The detailed installation method, cable crossings and requirement for any cable protection will be informed by preconstruction surveys which must be undertaken no earlier than 12 months prior to cable installation.
- Cable crossings will be determined by crossings agreements with cable and pipeline operators which will be progressed post consent.

The SIP provides a framework to agree the management measures with the MMO in consultation with Natural England prior to construction based on the best available information at that time.

The wording of the DCO condition (Schedules 11 and 12, Condition 9(1)(m)) allows a conclusion of no Adverse Effect on Integrity (AEoI) to be made through the commitment from the Applicant that the relevant activity cannot commence until the MMO is satisfied that there would be no AEoI:

"The licensed activities, or any phase of those activities must not commence until a site integrity plan which accords with the principles set out in the outline Norfolk Vanguard Haisborough, Hammond and Winterton Special Area of Conservation Site Integrity Plan has been submitted to the MMO and the





Written submission **Applicant's Response** MMO (in consultation with the relevant statutory nature conservation body) is satisfied that the plan provides such mitigation as is necessary to avoid adversely affecting the integrity (within the meaning of the 2017 Regulations) of a relevant site, to the extent that sandbanks and Sabellaria spinulosa reefs are a protected feature of that site." **Byelaw** The Applicant welcomes the MMO's advice and notes that there remains uncertainty as to The MMO advised they would provide a detailed background whether the DEFRA management area will be and impacts to the bye-law process and how the potential accepted by the EU. bye-law would impact this project. The Applicant agrees with the MMO that, The large area described by Natural England is a Department irrespective of the bye-laws, this issue is for Environment, Food and Rural Affairs (DEFRA) related to the need to appropriately assess management area not a MMO bye-law area. The MMO only the impacts to the HHW SAC prior to making a advise DEFRA within this process. The MMO cannot provide determination. The Applicant proposes that further information on the timescales and outcome. this is managed through the Outline Due to the current politically sensitivity the MMO received Haisborough Hammond and Winterton SAC comments from DEFRA on the process and updates below: Site Integrity Plan (document 8.20), submitted Under the Common Fisheries Policy (CFP), fisheries at Deadline 7. management measures for MPAs must be agreed by other Member States' with an active interest in the site. However, because other Member States with a direct management interest have not yet consented to our proposals, therefore, we have not yet been able to introduce measures. The Fisheries Bill contains new powers enabling the MMO to implement management measures much more quickly both in our MPAs and across our EEZ post-Exit. This will enable us to rapidly make progress on a number of measures following EU Exit. The MMO considers that, irrespective of the bye-laws, this issue is related to the need to appropriately assess the impacts to the HHW SAC prior to making a determination. The data underpinning the bye-law could be included as part of this assessment. However, the MMO defers to the opinion of Natural England as the relevant SNCB on if, and how, this data should be included and assessed. **Timescales** The Applicant refers to its previous submissions on this matter, in particular The MMO refers to its previous position to increase the

The MMO refers to its previous position to increase the timescale from 4 months to 6 months on projects of the size and scale as this. We note the applicant's response that they would seek to engage with the MMO and other bodies prior to this and we welcome this proposal. However, there is no facility within the licence to enforce this kind of engagement. If the applicant decides later not to, or if the project is sold to another undertaker who decides not to engage, then the MMO and our consultees again face a four month deadline with no reasonable ability to extend.

The Applicant refers to its previous submissions on this matter, in particular response to ExA Q20.109 and Q20.110 submitted at Deadline 1 (ExA; WQ; 10.D1.3), and the Applicant's Written Summary of Oral Submissions (ExA;ISH5;10.D6.10).

The Applicant would welcome an open engagement process with the MMO throughout the determination process and the Applicant would of course not wish to risk a





The MMO acknowledge there is the ability to request an extension from the applicant through agreement. This extension explicitly requires their agreement, The MMO would note that within the applicant's own response to deadline 4 second round of examiners questions, question 20.139 they have confirmed that, because of Contract for Difference (CfD) timeframes they cannot grant an extension to the 4 month timeframe. The MMO believe it is not possible to have confidence that extensions could be agreed upon within condition 15 (4) and that any restarting of the 4 month period would not be a desirable outcome for either party.

The MMO consider it is important to note the actual practicalities of these kinds of sign-off as well as the wording within the consent. If the works are submitted at 4 months prior to the construction start date then by this point the applicant already has contracts with vessels, and the construction and transport of components will be underway. If there are delays then the applicant will face significant costs from vessels sitting idle and the potential need to resource storage areas for wind farm infrastructure components that should have been installed. It is therefore very likely that the applicant will apply all pressure it can on the MMO and its consultees to adhere to a faster timeframe. This often leads to resource being drawn from other areas in order to try and facilitate a quicker turn around. By giving the MMO and its consultees 6 months there is more time to reach a conclusion, and less risk of any need for extension or delay.

Applicant's Response

refusal of the application if the MMO needed a short extension to determine the plan/document/scheme for approval. In these circumstances the Applicant would be willing to consider a reasonable extension. The Applicant is seeking only to avoid a situation where the discharge process continues endlessly.

The Applicant agrees that there are knock on implications for any delay to the approval process, such as significant costs from vessels sitting idle and the potential need to resource storage areas for wind farm infrastructure components that should have been installed, which could ultimately delay the production of clean energy for consumers. This is in part why the Applicant has inserted a pragmatic mechanism to reach a determination of a plan within a defined and structured timetable. In turn, unlocking vital nationally significant infrastructure. The Applicant would also be engaging with the MMO prior to submission in order to submit plans of high-quality with a sufficient level of detail. In this respect it should also be noted that in the majority of cases the final plan will have to accord with an outline plan (see for example, condition 14(1)(b), 14(1)(d), 14(1)(e), 14(1)(f), 14(1)(h), 14(1)(j), and 14(1)(m)), of Schedule 9-10); and the MMO have had the opportunity to review and comment on the outline plans throughout the Norfolk Vanguard examination process. Notwithstanding this, the Applicant has inserted a mechanism to allow the MMO to request further information within 2 months of submission of the plan for approval. The request for further information pauses the timeframe which the MMO have to approve the plan until the Applicant has provided the further information.

Without prejudice to its previous submissions and the applicability of arbitration and/or deemed approval to the MMO, the Applicant has taken on board the MMO's comments at ISH7 and inserted a bespoke appeal process in the event of refusal or non-determination of an application. See the Applicant's Written Summary of Oral Submissions from ISH7 (ExA; ISH7; 10.D7.2) and the dDCO (document reference 3.1 (version 5)).





Condition 15(4)

The MMO considers it inappropriate to put a timeframe on decisions of such a nature. As outlined in response to other issues, such as arbitration, a Deemed Marine Licence should be treated equal to a marine licence and the conditions imposed should be equivalent to those that would be granted on a marine licence. The MMO would not willingly seek to constrain our ability to make an appropriate decision on post consent sign off of plans and documentation, we would never include such a restriction on any other consent. The MMO previously raised concerns regarding the complexity of documentation and the need for these timeframes to be longer, indicating that there is likely to be insufficient time to consider all the relevant issues and seek appropriate feedback from statutory bodies. With such tight restrictions, the MMO is more likely to refuse an application for discharge. This would increase the risk to the development because, if these works were not granted discharge, the undertaker would have to provide updated documentation which would restart the process and potentially cause unnecessary delay The MMO also notes this condition seeks to restrict its ability to request further information to one month after submission. Again, this is incompatible with current licencing procedures. We would also note the timeframe given for this is entirely unreasonable. The applicant is aware that the MMO has service level agreements with many statutory consultees that requires a four week consultation period. The MMO may simply be unaware of a need for further information until such time as the first round of consultation is complete. Our only option then would be to refuse discharge and to require resubmission, again risking further delay.

Applicant's Response

The Applicant refers the MMO to its submission above, together with the Applicant's Written Summary of Oral Submissions from ISH7 (ExA; ISH7; 10.D7.2) and the dDCO (document reference 3.1 (version 5)), which address these concerns and take into account the submissions from the MMO at ISH7.

Condition 15 (5)

With regard to condition 15 (5) the MMO once again considers this inappropriate, and not commensurate with current marine licensing practice. The documentation involved in discharge covers a wide range of mitigation and has been applied due to significant risks. For it to be considered discharged in such a manner could mean that important environmental or navigational safety mitigations are not adequate. The inclusion of this condition risks a refusal late in the process and a return to the submission of documents stage increasing the risk of delay to the project. The MMO would also consider this a fettering of our authority to discharge licence conditions under the Marine and Coastal Access Act 2009 (MCAA). It is noted that these conditions have been added due to the removal of the arbitration provision against the MMO. The MMO would like to reiterate that the arbitration provisions were removed by the Secretary of State on the recent Tilbury 2 determination without the need for further controls placed on the regulatory body. The MMO question why such a restriction should be placed on the Vanguard project when it has not

The Applicant refers the MMO to its submission above, together with the Applicant's Written Summary of Oral Submissions from ISH7 (ExA; ISH7; 10.D7.2) and the dDCO (document reference 3.1 (version 5)), which address these concerns and takes into account the submissions from the MMO at ISH7.

The Applicant notes that the MMO is not expressly excluded from the arbitration article within the Tilbury DCO. In any event, the Applicant does not consider the Tilbury DCO to be analogous to that for an offshore wind scheme. The Tilbury DCO/DML is for an entirely different scale of development than that required for this Project (and offshore wind developments in general), and did not have the imperative of meeting Contracts for Difference (CfD) milestones. As such, Tilbury is not comparable to the Norfolk Vanguard DCO





been deemed necessary or reasonable on any other deemed marine licence to date. The MMO have reviewed the Tilbury 2 conditions and would like to note the inclusion of wording that 'the MMO must give notice of determination as soon as is reasonably practicable'. The MMO would suggest this wording could be included within the deemed marine licences to give further assurance these matters are treated with all due priority.

Finally, the MMO is a government body assigned powers and responsibilities by parliament to make these decisions and within that responsibility is a requirement to be reasonable. We have always been willing to work with both the applicants and our stakeholders to push for resolution to a timetable that is appropriate for all parties. We would never seek to delay making a decision unless there were significant concerns and issues to be addressed. The MMO will always make best endeavours to sign off all documentation in time for the proposed start date.

Applicant's Response

application and should not be considered to set any precedent in this respect. This can also be exemplified by the fact that the MMO have 6 weeks to determine a plan under the Tilbury DCO/DML - see condition 10 of Schedule 9 which provides that:

"Construction method statement

10.—(1) Following consultation with the Environment Agency and Natural England, the licence holder must submit a construction method statement, together with a report on the consultation carried out, for approval by the MMO, at least 6 weeks prior to the commencement of any licensed activity..."

Transfer of Benefit

The MMO had no concerns on the transfer of benefit, the MMO have previously requested a coexistence condition within the DML. The MMO have discussed this with the applicant and due to the limited cross over area on the project the MMO has withdrawn the request for this condition.

The Applicant welcomes this revised position and has no further comments.

Schedule 1, Part 3, Requirements

- The MMO notes that there is a change in the cable protection volumes from 10% to 5%, and that this would need to be accounted for within the overall cable protection volumes and areas.
- The MMO has requested that the maximum area of scour protection be included within the DML for individual structures such as turbines or offshore platforms, to ensure that the works brought forward match those that were assessed in the ES. The MMO advised that we would consider two options – either the outline Scour and Cable Protection Plan is amended to include individual figures, or the individual figures to be laid out on the face of the DML.
- The MMO raised concerns that cable protection should not be licenced for deployment at any time during the operation of the project.

- The revised areas and volumes of cable protection have been included in the draft DCO submitted on the 16th April 2019.
- Table 1 of the Outline Scour Protection and Cable Protection Plan (document 8.16) includes the scour protection parameters for individual foundations.
- The Applicant notes the MMO's position and has confirmed in the Outline Haisborough Hammond and Winterton SAC Site Integrity Plan (document 8.20) and in the Updated Outline Offshore Operation and Maintenance Plan (document 8.11) that if cable protection were to be required during maintenance, this would be subject to an additional Marine Licence.

Schedules 9, 10, 11 and 12 - Deemed Marine Licences

- The applicant advised that they are going to reword the relevant documents to include any piling rather than just pile driving. The MMO confirmed this was satisfactory.
- The MMO confirmed they were content that there is no UXO activity included within the DCO.
- The MMO welcomed the inclusion of the maximum
- The draft DCO submitted on the 16th April 2019 refers to "piled foundation" in order to capture any installation method adopted to install these foundation types rather than just pile driving.
- Noted, the Applicant agrees that UXO is not included in the draft DCO.
- Disposal in the SAC is included in the





disposal and drill arising volumes. The MMO still request that the volumes for disposal within the HHW SAC are separately defined within the DMLs.

- The MMO advised that after discussions with the applicant the cable crossing numbers do not need to be defined within the DCO.
- The MMO acknowledge the concern the applicant raised about the consistency of requests by the MMO, TH and Maritime and Coastguard Agency (MCA). The MMO have provided up to date conditions agreed by the MMO, MCA and TH:

The MMO support Trinity house on their inclusion within Condition 19 (4) and 20 (2d). The MMO propose the following wording:

19 (4) Construction monitoring must include traffic monitoring in accordance with the outline marine traffic monitoring strategy, including the provision of reports on the results of that monitoring as periodically requested by the MMO in consultation with the MCA and Trinity House.

20 (2d) post-construction traffic monitoring in accordance with the outline marine traffic monitoring strategy, including the provision of reports on the results of that monitoring as periodically as requested by the MMO in consultation with the MCA and Trinity House.

The MMO believe these conditions do not need to be added to Schedule 11 and 12 as there are less traffic risks from the cables installation. In addition to this the infrastructure that does exist will be inside the windfarm array area and will be captured by the generation asset monitoring.

 The MMO acknowledge the concern Historic England (HE) expressed about inconsistencies across the current DCO's undergoing examination. The MMO have not had time to reach a resolution on this issue and advise we will discuss with HE and provide further comments in Deadline 7.

Applicant's Response

- draft DCO under Part 3, 1(d)(iv) of the DMLs (Schedules 9 to 12)
- The Applicant welcomes this revised position
- The Applicant has incorporated this suggested change within the dDCO (document reference 3.1) and added Trinity House to Condition 19(4) and Condition 20(2)(d) in Schedule 9 and 10. The Applicant understands that the MMO has stated they are reviewing consistency and will respond at Deadline 7. The Applicant will review any submission by the MMO.

Cable burial risk assessment

The ExA highlighted that a Cable Burial Risk Assessment will be produced. This was highlighted as part of 14 (1)(g). The MMO believe this may be sufficient to provide the information required. However, the timelines for this document will need to be matched against any timescales for the production of a SIP for the HHW SAC, should such a condition be added.

The cable burial risk assessment is secured within Condition 14(1)(g) of the Generation DMLs and Condition 9(1)(g) of the Transmission DMLs as the risk assessment will need to be provided for the entirety of the cables and the cable export corridor, rather than just for the HHW SAC. The Applicant has, however, provided further details of the cable burial specific to the HHW SAC within the Outline SIP for the HHW SAC (document reference 8.20) including by way of appending the Interim Cable Burial Study.

The Applicant acknowledges the MMO's suggestion for matching timescales; in order





Written submission	Applicant's Response
	to capture the appropriate details from the cable burial risk assessment, the Applicant expects to be in a position to submit the cable specification, installation and monitoring plan (under condition 14(1)(g) and condition 9(1)(g)) to the MMO at a similar time to submitting the SIP for the HHW SAC.
The MMO wishes to add the following condition that has been presented within the HOW3 DCO: Reporting of cable protection 23.—(1) Not more than 4 months following completion of the construction phase of the project, the undertaker shall provide the MMO and the relevant SNCBs with a report setting out details of the cable protection used for the authorised scheme. (2) The report shall include the following information— (a) location of the cable protection; (b) volume of cable protection; and (c) any other information relating to the cable protection as agreed between the MMO and the undertaker.	The Applicant has added this condition to version 5 of the dDCO submitted at Deadline 7. The wording can be located at Condition 22 of the Generation DMLs (Schedule 9-10) and Condition 17 of the Transmission DMLs (Schedule 11-12).
Proposed Condition 15 amendments The MMO questions why the applicant seeks to impose such time restrictions as this may threaten the previous flexibility offered to developers in the past when they have sought prioritisation of their activities for a justifiable reason, and the MMO has responded accordingly to facilitate. The applicant is reminded that the MMO is processing numerous applications within any given time and needs to be offered the opportunity to be flexible to offer a fair and quality service to all applicants. The MMO note that the applicant stated that if the Arbitration, determination of conditions and deemed discharge conditions were not accepted by the ExA the applicant would look to amend the wording to include a commitment from the MMO that it would make best endeavours to discharge the conditions within 4/6 months of receipt of the documents. The MMO would agree with the concept in principle.	The Applicant refers the MMO to its submissions above, together with the Applicant's Written Summary of Oral Submissions from ISH7 (ExA; ISH7; 10.D7.2) and the dDCO (document reference 3.1 (version 5)), which takes into account the submissions from the MMO.
Appendix 2 – Standard Navigational Conditions The MMO provides standard navigation conditions for inclusion within Deemed Marine Licences (DML) for offshore renewable energy installations. Agreed by Marine Management Organisation (MMO), Trinity House and Maritime and Coastguard Agency (MCA) September 2018.	The Applicant complies with the general themes and approach of the Standard Navigational Conditions save that the Applicant's DML goes beyond the general conditions and provides further commitments and project specific references. The Applicant notes that the MMO is considering matters relating to consistency and that the MMO are meeting with the MCA and Trinity House to provide joint comments specifically on these conditions as currently drafted in the Norfolk Vanguard dDCO. The Applicant is willing to consider points relating





Written submission	Applicant's Response
	to consistency if these are put forward by the MMO, but is currently satisfied that the DMLs are drafted appropriately bearing in mind the bespoke matters agreed for the Norfolk Vanguard project and the drafting conventions of a statutory instrument, which do not apply to Marine Licences.

2.10 Oulton PC

Written submission	Applicant's Response
Although NV's cable drums will be smaller, the relentless regularity of Hornsea Three's competing AIL deliveries to their Oulton compound will have a major impact on the ability of Norfolk Vanguard to pass smoothly up and down the access route.	In the event that Norfolk Vanguard and Hornsea Project Three have concurrent construction works in the vicinity of Oulton, the Norfolk Vanguard communication plan (captured in the Outline Code of Construction Practice and secured through DCO Requirement 20) will set out the following:
	Procedures for engaging with Hornsea Project Three;
	Procedures for Norfolk Vanguard and Hornsea Project Three to engage with the Local Highway Authority; and
	Procedures for engaging with affected residents, businesses and landowners and other local stakeholders.
	This will ensure that both projects engage during the scheduling of deliveries, to minimise potential delays associated with Hornsea Project Three's requirement to deliver cable drums to site as abnormal loads.
OPC is unaware of any independent noise and vibration assessment carried out by NV and queries whether it is safe or reasonable to rely on another project's flawed assessments.	The Applicant undertook an assessment of cumulative noise impacts along The Street based on the standard methodology agreed as part of the EIA and through the evidence plan process. The assessment formed part of the traffic cumulative impact assessment submitted to the examination at Deadline 5 (ExA; ISH1; 10.D5.3). The assessment identified a potential moderate adverse noise impact at the nearest residential receptor (Old Railway Gatehouse) associated with cumulative construction traffic. Mitigation measures proposed as part of the scheme of mitigation along The Street, including speed restrictions and regrading the road surface, will reduce potential noise impacts down to negligible. Subsequently further consideration has been given to the potential noise increases associated with vehicles giving way in proximity to the Old Railway Gatehouse,





Written submission Applicant's Response

and the associated noise of idling and accelerating vehicles. This assessment has been submitted to the examination at Deadline 7 (ExA; ISH6; 10.D7.7) and concluded that noise contribution associated with idling / slow moving HGVs in proximity to the Old Railway Gatehouse does not lead to a significant increase in noise compared to the noise levels assessed within the cumulative impact assessment submitted at Deadline 5. The Applicant's assessment of potential cumulative noise was not reliant on data collected by Hornsea Project Three nor was it reliant on any assessment undertaken by Hornsea Project Three.

Norfolk Vanguard obtained vibration monitoring data collected by Hornsea Project Three at the Old Railway Gatehouse in order to undertake an assessment of potential vibration effects associated with cumulative construction traffic. The method of data collection used by Hornsea Project Three was reviewed and the data determined to have been collected appropriately using appropriately calibrated instruments. The assessment undertaken by Norfolk Vanguard (submitted at Deadline 5 as part of the traffic CIA) did not identify any significant vibration impacts based on the methodology agreed within the EIA and through the evidence plan process.

The Parish Council is similarly concerned about the apparent lack of an air quality assessment. Neither project has seen fit to carry out such an assessment for the residents of the Old Railway Gatehouse, who will be severely impacted by HGV particulate emissions for the entire duration of both projects – with the anticipated cumulative HGV traffic increase estimated between 487% and 548% by the two project teams.

4.1 OPC raised the point at the ISH on 27th March 2019 that an air quality assessment had not been carried out for LINK 68. The applicant replied that this had been carried out and detailed in the cumulative impact assessment, which was submitted at Deadline 5.

OPC would like to point out that LINK 68 has been omitted and did not feature either in previous air quality assessments or in the updated CIA for deadline 5. If we are mistaken, then we seek clarification from the Applicant and request that they direct us to the appropriate documentation.

4.2 The data for the updated CIA was based upon the earlier air quality assessments, as stated in the latest CIA deadline 5: "The methodology for the assessment was as presented in

The cumulative air quality impact assessment submitted at Deadline 5 was based on the previously agreed air quality receptors in proximity to the construction traffic access routes. The Old Railway Gatehouse was not identified as one of the assessment receptors for Norfolk Vanguard alone and the CIA submitted at Deadline 5 did not include that property. The IAQM guidance quotes includes screening criteria whereby road traffic air quality assessment is required where there is an increase in HGVs of more than 100 per day as a result of the development. Norfolk Vanguard alone was below this threshold on Link 68 and so the Old Railway Gatehouse was not included in the Norfolk Vanguard alone assessment. However, cumulative traffic would exceed 100 and it should have been included within the CIA. The Applicant has subsequently re-run the air quality model separately for this property for completeness. Details of this assessment are included within





the Norfolk Vanguard Environmental Statement. Traffic associated with Hornsea Project Three has been included in the 'with project' scenario, to consider the overall cumulative impacts that may be experienced at receptors should the peak construction periods of both projects occur concurrently. Cumulative traffic flows have been considered on the road links shared by both projects. Impacts have been considered at sensitive receptors identified in the original assessment presented in Environmental Statement Chapter 26 Air Quality."

- 4.3 The nearest receptor in the assessments referred to above, and in the current CIA was R79, which is on the B1149 (Holt Road). The Street, Oulton including The Old Railway Gatehouse has not been assessed. It would be assumed that an air quality assessment should have been carried out at The Old Railway Gatehouse as a sensitive receptor, as there would be the cumulative impact of 214 HGVs daily and the property is within only 2 or 3 metres of the highway.
- 4.4 The criteria used by HOW3 for judging the necessity for assessment of air quality at a specific site was the IAQM guidance (IAQM, 2014). This states that a detailed assessment is required where there are human receptors within 350m of the site boundary and/or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

The Old Railway Gatehouse qualifies for a "detailed assessment" of air quality when judged by these criteria, but was not so assessed by HOW3.

4.5 The Old Railway Gatehouse has been assessed by HOW3 (though not by NV) for noise and vibration due to road traffic increases, especially HGVs. As a result of that noise and vibration assessment, a road intervention scheme has been proposed as mitigation to reduce potential noise impacts. However, it should also have been necessary to assess air quality at this property, given the close proximity of the house to the road, and the increase in proposed HGVs.

OPC would maintain that it is unacceptable for a developer to consider that, because of the road intervention scheme introduced to mitigate noise and vibration effects at the Gatehouse, this should somehow obviate the need for an air quality assessment at the same time. The two issues are entirely separate, and the level of emissions caused by the increase in all traffic will need to be evaluated and mitigated for separately.

4.6 In conclusion, given that HOW3 did not assess the Gatehouse for air quality, and that the Examination process for Hornsea Three has now closed, with this matter unresolved, OPC calls upon Vattenfall to carry out a cumulative air quality assessment for the Old Railway Gatehouse, as a matter of urgency.

The Applicant seems to be relying heavily on the assessment work and earlier detailed planning carried out by HOW3 – at

Applicant's Response

the Applicant's Old Railway Gatehouse Air Quality Assessment Methodology, submitted at Deadline 7 (ExA; ISH6; 10.D7.9). The inclusion of cumulative traffic does not result in a change in concentrations any greater than 4.3% of the relevant air quality Objectives for concentrations for NO2, PM10 and PM2.5 and the cumulative impact is considered to be negligible in all cases.

The Applicant has committed to adopting the same scheme of mitigation proposed by





Written submission Applicant's Response

least in relation to the mitigation and alterations to the roadway along the southern section of Oulton Street.

OPC remains concerned about the apparent lack of independent production by Vattenfall of any detailed technical drawings of the highway intervention scheme, and seeks clarification as to exactly the degree of "cooperation" that is being envisaged over some sort of future "sharing" of detailed construction plans.

This is vital in the event that the NV project proceeds in isolation or before HOW3 as such information would be crucial in providing contractors with sufficient information to tender and complete the works required.

Hornsea Project Three along The Street at Oulton. The drawings produced by Hornsea Project Three set out the general arrangement of the proposed measures but would need to be worked up into detailed design drawings to discharge the relevant DCO Requirements and to inform any tender process to undertake the works. Whichever project progresses first would commit to introducing the mitigation measures and so would take responsibility for progressing the detailed design suitable for construction.

2.11 Happisburgh PC

Written submission	Applicant's Response
I confirm this route marked in green is the route I took from landfall out of Happisburgh to the main road with The Planning Inspectorate. I did offer Mr Driver to accompany me but it appears he was still looking at his plans when we left. I am some what surprised VF raised this matter after I left the meeting in Norwich when earlier in the meeting I spoke about transport.	The route supplied by Happisburgh Parish Council has been noted by the Applicant. The Applicant submitted detailed figures showing the landfall HGV access route as well as the cable crossing point with Hornsea Project Three as a response to the Examining Authority's action point 15 from Issue Specific Hearing 4 (ExA; ISH4; 10.D6.2).
This weekend I measured the distance with a measuring wheel from the Cliff edge to the Lighthouse 165mtrs and back from the Lighthouse to the cliff edge 164.5 mtrs.	The Applicant has noted this distance, though it does not change the outcomes of any assessment and the project design at landfall takes into account projected coastal erosion as a result of climate change.

2.12 Jenny Smedley

Written submission	Applicant's Response
1. Can the applicant assure us that an explosive attack on their substations (perhaps by drones) would not cause widespread damage/loss of life to	Health and safety is a very high priority for the Applicant in relation to all development, operational (and decommissioning) activities.
the communities that will surround them?	The careful siting of the proposed onshore project substation, 700m away from the nearest dwellings, minimises risk to local residents.
	During the detailed design stage, measures will be drawn up to minimise risks and the Applicant will ensure best-in-class technology is incorporated into the final design. The infrastructure will include transformers which will be surrounded by a blast wall (standard in any design) to further contain any potential explosion risks.
2. Can the applicant guarantee us that putting the biggest onshore or offshore windfarm in the world	The onshore project substation near Necton will not pose a hazard to the public.





Written submission	Applicant's Response

in a readily accessible, highly populated and prominent position will not attract the attention of terrorists?

The onshore project substation will be secured through perimeter fencing and other security measures to prevent unauthorised access.

No terrorism attack has ever occurred to a substation on UK soil and, on this basis, it is reasonable to say that the risk of terrorism is low. Beyond this, the design and operation of substations are regulated and controlled to the highest health and safety standards; and operators are required to develop emergency response plans and crisis management procedures as part of that regulatory process.

3. Would the applicant agree that an offshore ring main, with just two substations (away from the population) would be eminently more defendable than many dotted around rural areas? We appreciate that currently an offshore ring main is not available, but if it were, would the applicant agree that it would be a better solution?

Whether an Offshore Ring Main (ORM) is the right strategic investment to connect the offshore wind industry's next generation of projects to the Grid is a question for National Grid and Ofgem, the regulators. The Applicant has worked with the framework as set out to deliver an environmentally acceptable and efficient solution, including the adoption of HVDC technology.

In the absence of a design for the ORM concept, including the proposed siting of the key onshore and offshore elements, it is not possible to evaluate whether this solution would be a viable option.

However, it is worth noting that the ORM concept would necessarily involve the construction of onshore converter stations and other connection infrastructure, very similar to those proposed for Norfolk Vanguard. This infrastructure would be subject to the very same potential or perceived risks highlighted by Ms Smedley within her submission in relation to those proposed by the Applicant.

4. Does the applicant accept that residents are terrified of the prospect of their 55 acres (Vanguard + Boreas + plus NG
extensions) catching fire and becoming a major

extensions), catching fire and becoming a major conflagration, which would also likely spread to Dudgeon, and most likely destroy at least one community, depending on the wind direction?

The Applicant would like to reassure Ms Smedley and the residents of Necton that Health and Safety is a very high priority for the Applicant in relation to all development, operational (and decommissioning) activities.

Substations are generally not a significant fire risk because of the measures put in place to minimise that risk. Any potentially flammable assets are not located near the perimeter of the infrastructure, and the ground materials and other physical barriers included in the design will contain fire to within the compound.

The risk of substation fires is historically low; however, substation fires can impact the supply of electricity and create a localised fire hazard. The highest appropriate levels of fire protection and resilience will therefore be specified for the onshore project substation to minimise fire risks. The energy sector has some of the highest health and safety requirements and these standards will be incorporated into substation design.





Options to help mitigation have been suggested to the developer, wrapping the buildings (this is done in cities and towns) and is a form of camouflage, sinking the site, and underground substations. Can the applicant explain why all these options have been summarily dismissed?

Applicant's Response

The onshore project substation has been sited appropriately and sensitively with the aim of minimising environmental impacts, including any potential visual impacts, for example making effective use of the topography and existing woodland blocks for screening, please refer to Chapter 4 and Chapter 29 of the ES for more detail.

A further advantage of the proposed site is that the land is relatively flat which minimises required earthworks to create a level foundation. Earthworks to level uneven land, let alone sink, or bury infrastructure would require a lengthier pre-construction and construction period, greater traffic movements to remove excavated materials and transport additional construction materials, with associated impacts such as noise as well as creating a more notable impact on landscape character and visual amenity due to additional earthworks. The Application does include consideration of a limited amount of earthworks, including the potential to create bunds in order to elevate mitigation planting if appropriate.

Should the project be consented, detailed design will follow, and as has been noted previously there are options to consider which can help reduce any potential visual impacts still further, including colour, and choice of materials for the converter hall buildings.

Ms Smedley implies that questionnaires accompanying various rounds of consultations somehow guided responses from consultees in a particular direction.

The Applicant has followed a programme of extensive pre-application consultation with local communities and statutory and non-statutory consultees and the effectiveness of the consultation process is demonstrated by the Applicant having made a number of significant changes to the project post-consultation. In relation to Statutory Consultation responses for example, at least as many responses were received in the form of e-mails and letters as were provided within questionnaires. All written responses have been given due regard by the applicant, as described in the Consultation Report.

Ms Smedley quotes some passages extracted from findings of the OSPAR Commission (OSPAR is the mechanism by which 15 Governments & the EU cooperate to protect the marine environment of the North-East Atlantic and NASA:

- 1. electric cable to shore increase of temperature in sediments during operation increased risk of botulism in coastal areas (eulittoral) resulting in an increased death rate for wading birds and water birds
- 2. local destruction and sediment plumes during the construction of foundations permanent
- 1) The eulittoral zone represents the lower part of the intertidal zone, i.e. the part of the coast subject to daily inundations from the rising and falling tides. The offshore export cables will be installed by horizontal directional drilling several hundred meters offshore and exiting inland at least 125m inland of the cliff edge. Within the eulittoral zone the cables will be buried approximately 15m below ground, which will avoid any heating of the surface sediments.
- 2) A detailed assessment of the effects of marine water quality including the effects of sediment temporarily released during the offshore works is presented within





covering of the seafloor - temporary and permanent habitat loss Macrophytes - change of current dynamics and sediment conditions - introduction of artificial hard substrate - habitat loss - alteration in the plant community composition.

MS Smedley asks:

- i. Does the applicant accept that these two points are correct?
- ii. What steps are they taking to investigate and mitigate these effects?

Applicant's Response

Environmental Statement (ES) Chapter 9 Marine Water and Sediment Quality. No significant impacts were identified within this assessment.

Habitat loss associated with the introduction of turbine foundations and cable laying offshore have been considered in detail within ES Chapter 10 Benthic and Intertidal Ecology. Impacts and associated mitigation are identified in full within Chapter 10.

2.13 NSAG

Written submission

NSAG suggest that converter transformers are outdoors and can generate significant levels of audible noise.

Applicant's Response

AS noted in Appendix 20.14 of the Consultation Report, (February 2018 Newsletter): "Illustrations of the HVDC onshore project substation near Necton have been shown during the consultation.

Most of the electrical assets are enclosed within a building (the converter hall). Electrical assets outside the converter hall can be covered by close fitting noise enclosures. These measures provide significant noise mitigation."

The transformers will be located outdoors and it may be necessary to use acoustic enclosures, however the Applicant has committed through Requirement 27 of the draft DCO that the operational noise at the substation will not exceed the current noise rating levels of the Dudgeon substation and this limit has been agreed with Breckland District Council (see Statement of Common Ground (Rep2 - SOCG - 2.1).

NSAG have read information published by National Grid , which causes concern that "HVDC systems have a tendency to attract pollution/particulates". NSAG are also worried that HVDC transmission systems do not have the longevity of HVAC transmission systems.

The HVDC export infrastructure proposed by the Applicant makes extensive use of buried cables, and avoids the use of 'open terminal' HVDC equipment such as overhead lines. As such, few 'live' components of the system will be exposed to the atmosphere, and subject to the effects of particulate pollution. This issue will not affect the proposed HVDC infrastructure.

As the National Grid reference document quoted by NSAG states, "HVDC has advantages for long transmission distances". The document also states that "in many cases, offshore transmission is better suited to HVDC applications than traditional AC." Furthermore, the document states that "Voltage Source Converter (VSC) (a specific type of HVDC system) is the preferred technology for the connection of wind farms located far from the shore where the distance makes an AC connection uneconomic and unfeasible". It is therefore clear that the National Grid document acknowledges





Written submission	Applicant's Response
	that HVDC is a suitable, and in many cases a more beneficial, connection technology for long distances and offshore connections such as wind farms.
	These benefits have been realised through Norfolk Vanguard's commitment to HVDC technology which provides embedded mitigation to minimise environmental impacts through the following design considerations:
	 Fewer cables than the HVAC solution reducing the cable route working width (for Norfolk Vanguard and Norfolk Boreas combined) to 45m from the previously identified worst case of 100m. As a result, the overall footprint of the onshore cable route required for the duct installation phase is reduced from approximately 600ha to 270ha
	The width of permanent cable easement is reduced from 54m to 20m
	Removes the requirement for a Cable Relay Station
	Reduces the maximum duration of the cable pull phase from three years down to two years
	 Reduces the total number of jointing bays for Norfolk Vanguard from 450 to 150
	 Reduces the number of drills needed at trenchless crossings (including landfall)
	Norfolk Vanguard's commitment to HVDC technology provides the most environmentally sustainable approach. With specific reference to life expectancy, the National Grid document states that HVDC systems have a life expectancy of 40 years which is beyond the 30 year approximate operational life of the offshore wind farm. The document notes that parts of the converter stations are likely to need replacing after 20 years, however this is limited to the valves within the converter halls which represent a very small proportion of the overall connection apparatus.
NSAG suggest that an Offshore Ring Main may represent a more coordinated way to connect power from offshore wind farms into the National Grid.	Whether an ORM is the right strategic investment to connect the offshore wind industry's next generation of projects is a question for National Grid and Ofgem, the regulators. The Applicant has worked within the existing framework as set out to deliver an environmentally acceptable and efficient solution, including the adoption of HVDC technology.
NSAG describe their installation of a bright orange- red helium-filled (2m diameter) balloon suspended from a rope 25m long, fixed on private land	The Applicant notes the actions of NSAG in this respect. The Applicant maintains that the onshore project substation has been sited appropriately and sensitively





several hundred metres away from the proposed substation location. They note their desire was to illustrate the visual impact of the project substation.

Applicant's Response

with the aim of minimising environmental impacts, including any potential visual impacts, for example making effective use of the topography and existing woodland blocks for screening, please refer to Chapter 4 and Chapter 29 of the ES for more detail.

NSAG express concerns in relation to safety risks they consider relevant to substation infrastructure, noting: "There is of course a lot of security and fencing in substations to keep people out, and yet they do get in. These modern substations are unmanned, and this means any failure in security could result in a breach."

NSAG pose the following questions:

- 1 "Which [of these] terribly dangerous elements will be used in ? What will be the procedure if any substances leak? How will residents be protected?"
- 2: Would any of the applicants live close to their own substation? If not, why not?
- 3: How will the applicant stop windblown fire risk to residents, as there will be residents on each and every side, so no matter which direction the wind is in fire can rapidly spread. If a choice is available, what will be the priority, saving the substation and maybe preventing further spread, or saving residents?
- 4: Neighbouring residential and commercial properties are under threat if the fire cannot be contained, and smoke can cause breathing difficulties across a wide area, especially for those with existing respiratory conditions. Can the applicant assure us that Vanguard will never catch fire, or that residents will never be out in danger either from fire or smoke inhalation?
- 5: Could the applicant tell us how they will stop birds and
- other flying creatures, and of course drones from entering?

Health and safety is a very high priority for the Applicant in relation to all development, operational (and decommissioning) activities.

During the detailed design stage, measures will be drawn up to minimise risks—these are standard within any design, and the Applicant will ensure best-in-class technology is incorporated into the design.

The design and operation of substations are regulated and controlled to the highest health and safety standards; and operators are required to develop emergency response plans and crisis management procedures as part of that regulatory process.

- 1. The onshore project substation will be secured through perimeter fencing and other security measures to prevent unauthorised access. The infrastructure will include transformers which will be surrounded by a blast wall (standard in any design) to further contain any potential explosion risks.
- 2. The Applicant has worked through the EIA process to minimise and mitigate against the potential impact of the substations, such that residents can feel assured there will be no adverse effects of living near well designed and well operated electrical infrastructure.
- 3 & 4. The Applicant would like to reassure NSAG members and the residents of Necton that Health and Safety is a very high priority for the Applicant in relation to all development, operational (and decommissioning) activities.

Substations are generally not a significant fire risk because of the measures put in place to minimise that risk, including suppression and containment systems. Any potentially flammable assets are not located near the perimeter of the infrastructure, and the ground materials and other physical barriers included in the design will contain fire to within the compound.

The risk of substation fires is historically low; however, substation fires can impact the supply of electricity and create a localised fire hazard. The highest appropriate levels of fire protection and resilience will therefore be specified for the onshore project substation to minimise fire risks. The energy sector has some of the highest health and safety requirements and these standards will be incorporated into substation design.

5. Birds and bats will not be prevented from entering the





Written submission	Applicant's Response
	substation compound. They do not present a safety risk to the substation nor to the animals themselves. The same applies to drones.
NSAG are concerned that house prices will be devalued, if they are located close to electrical infrastructure. NSAG pose the question: If offered two similar properties, one with a substation of the capacity of theirs close by and one without, which one would the applicants buy?	As the Applicant outlines in response to Q19.9 at Deadline 1 (ExA;WQ;10.D1.3), the NPS EN-1 Section 5.6 sets out the assessment criteria for socio-economic impacts. This identifies that the assessment should consider: • The creation of jobs and training opportunities. • The provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities. • Effects on tourism. • The impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure. A search was undertaken of the Journal of Property Investment and Finance, which showed little evidence to establish a quantifiable link between house prices and renewable energy infrastructure. This was reported within ES Chapter 31 Socio-Economics (document reference 6.1.31). The scope of the socio-economic impact assessment was agreed during the scoping exercise and reaffirmed through Section 42 consultation. Neither the NPS nor the agreed scope of the assessment identified a requirement to consider the impact on local house prices.
NSAG are concerned that projects such as Norfolk Vanguard do not represent an environmentally responsible solution to meeting the electricity demands of the UK consumer, when the cost to the environment in providing the steel, concrete, copper, aluminium, composites, teflon, plastics, rare earth, vehicles, fossil fuels, maintenance etc, used to construct the project is taken into consideration. NSAG ask: Can the applicant please address the environmental impact of producing any of the individual elements required for their project?	ES Chapter 2 Project Need outlines the Need for the project and presents the importance of offshore wind energy, including the need for the Project in meeting global, European Union (EU) and United Kingdom (UK) policy commitments for renewable energy and wider policy objectives for UK energy security, decarbonisation and economic growth. Further detail on the relevant UK commitments and the policy and legislation designed to implement them is discussed in ES Chapter 3 Policy and Legislative Context. While the Applicant accepts that some aspects of developing, constructing and eventually decommissioning the Project will have some consequences on our environment, the Applicant is working hard to improve all aspects of the Project's sustainability. The Applicant would refer NSAG to the most recent Vattenfall Sustainability Report and in particular to Vattenfall's total impacts and contributions to the UN's Global Sustainable Development Goals: • Vattenfall are codifying guidelines for responsible purchasing and human rights





Written submission	Applicant's Response
	 policies within its supply chain through its Code of Conduct for Suppliers. Vattenfall are striving to achieve best-in-class efficiency in all operations and the greatest possible production with the smallest possible use of fuel and chemicals as well the minimum amount of waste. Vattenfall's Environmental Product Declarations and Life Cycle Assessments enable customers to make smart choices.
Offshore Ring Main, NSAG ask whether the Applicant would welcome an offshore ring main?	Whether an ORM is the right strategic investment to connect the offshore wind industry's next generation of projects is a question for National Grid and Ofgem, the regulators. The Applicant has worked within the current framework as set out to deliver an environmentally acceptable and efficient solution, including the adoption of HVDC technology.
Can the developer please give the true output of these projects, taking into account the load factor? Isn't it likely that the windfarms will only produce a maximum of 50% of that suggested?	Chapter 2 Need for Project of the ES, paragraph 13 states that "Norfolk Vanguard will generate approximately 7.0 TWh/year". This is based on the following calculation: "1800MW x 8760h/year x 50% (capacity factor) x 90% (availability factor)". The Applicant considers that the figures provided to date reflect a conservative estimate of the equivalent electricity requirement of UK domestic consumers.
	The Applicant would refer NSAG to Renewable UK's paper (https://www.renewableuk.com/page/UKWEDExplained) for an explanation of how these calculations are undertaken, taking into account load factors. To date the Applicant has used very conservative load factors.
Can the applicant please confirm that they will be applying for CFDs?	As noted in the Applicant's response to question 22.48 in the Applicant's comments on responses to Further Written Question Responses (ExA; FurtherWQ; 10.D5.2), it is the Applicant's intention to bid for a CfD at the earliest opportunity following a successful DCO consent decision.
Lack of forward planning and Investment in NETS infrastructure by the profligate NG plc is the issue. Without a national plan for the uptake of renewable energy from off-shore to on-shore, rural Norfolk will be overrun with transmission cables and substations, and the impact of pursuing the current plans just for profits, will have a serious detrimental environmental impact.	As noted above, the Applicant has worked within the current framework to deliver an environmentally acceptable and efficient solution for the Project.
Q 5. Does the applicant agree with this statement? Can either [Norfolk Vanguard or Norfolk Boreas] project on its own be a viable proposition or do the economics mean that either one can only be	The Applicant confirms that each project is viable as a stand-alone project. This is why Norfolk Vanguard and Norfolk Boreas are subject to two separate DCO





Written submission	Applicant's Response
built as one of a pair?	application processes.

2.14 EIFCA

Written submission

Update on proposals for closed areas within Haisborough, Hammond & Winterton Special Area of Conservation (HHW SAC):

The Eastern Inshore Fisheries and Conservation Agency (IFCA) Deadline 6 submission provides an overview of the process and timescales for proposed byelaw areas. Informal consultation with fishermen has been undertaken by Eastern IFCA and a link to the consultation documents was provided.

The outcomes of the informal consultation will be reviewed on 15th May 2019 to determine whether to proceed with the proposals. If accepted, formal public consultation would follow (to last approx. 28 days). Then the byelaw(s) would be submitted to the MMO and Defra for scrutiny and ultimate signoff (estimated 6-9 months). After the byelaw is implemented, the areas closed to bottom-towed fishing gear will be reviewed and could be increased or decreased, where evidence supports such a change.

One of Eastern IFCA's proposed closure areas coincides with the Norfolk Vanguard offshore cable corridor.

The Eastern IFCA notes that it is not intended that the all of the area that was informally consulted on will become the Byelaw area – rather the Box is a management focus area for which the Eastern IFCA are seeking information on fishing activity.

Applicant's Response

Given the timescales outlined by the Eastern IFCA, it is highly unlikely that the byelaw will be in place at the time of consent determination for Norfolk Vanguard.

If the byelaw is implemented, the areas will be closed to bottom-towed fishing gear.

The MMO's D6 submission which states that, "irrespective of the bye-laws, this issue is related to the need to appropriately assess the impacts to the HHW SAC prior to making a determination", the Applicant agrees that this issue relates to the need to determine no Adverse Effect on Integrity in relation to the Conservation Objectives of the site. The Outline Haisborough Hammond and Winterton SAC Site Integrity Plan, submitted at Deadline 7, provides consideration of the areas to be managed as reef that are the basis of the proposed byelaw areas.

2.15 Natural England

Written submission

Natural England's Written Summary of Oral Representations made at ISH4: Environmental Matters

Agenda Item 5: Onshore Ecology

- Issues withdrawn regarding:
 - o water dependent designated sites
 - bats associated with Paston Great Barn SAC

Applicant's Response

- The Applicant welcomes Natural England's revised position following the clarification note provided by the Applicant. No further comments.
 - Discussions are ongoing between the Applicant and Natural England regarding sediment management at the River Wensum. A position statement (document reference ExA; AS; 10.D7.22) is provided at Deadline 7 and the updated Statement of Common Ground





Written submission	Appli	cant's Response
 Sand martins at cliffs; Use of the 300m buffer in relatio sites; Grade 3 Agricult Classification (A Reinstatement of Wensum crossing Broadland SPA assessme impacts that crop rotation 	Happisburgh In disturbance In to designated Stural Land LC); and In the River In the River In the potential In the many have on	OCG) will be submitted at Deadline 8. The Applicant has provided further clarification to entural England on 8th April addressing remaining sutstanding concerns. This includes further easures to address the potential for wintering and associated with Broadland SPA to be present eithin arable land affected by the construction porks.
overwintering bird specie Natural England's Written Summ Representations made at ISH4: E Matters Agenda Item 6: Offshore Ornithol i. Collision Risk Modelling (CRM) a. Question from examiner: Are ye	ary of Oral nvironmental ogy	dology?
2.2 Natural England confirmed the start of the hearing was produced. 2.3. Natural England also confirmed agreement with the proposed CRI the use of parameters in the Band for flight heights and avoidance ranged Nature Conservation Body adviced upper and lower confidence interfactors.	at the meeting held prior to uctive. ed that we were in M methodology including d 2012 model using option ates as per the Statutory provided in 2014 with vals, use of means with	The Applicant agrees and is grateful to Natural England for attending this meeting. The Applicant acknowledges and welcomes Natural England's position on this aspect.
2.4. Natural England stated that we correlation there were more nuar for example turbine design may a	whilst there was some nces than just a simple 10% Iso have an influence.	
c. Question from examiner to RSP Can you explain why? 2.5. Natural England have previous evidence of mechanisms of densitive regulation are lacking for most set assuming that a population is cap compensatory density dependent of empirical evidence at the relevathe potential to underestimate the proposed development on the for 2.6. Natural England agrees that care likely to operate on seabird pois no clear evidence to support apform or magnitude of density deprecommended that density indepshould be considered.	usly noted that empirical try dependent population abird populations and able of exhibiting a cresponse, in the absence ant population scale, has e potential impact of a cal seabird population. density dependent process opulations, but where there polication of any particular sendence operating we have	independent formulations.





Applicant's Response

- 2.7. Natural England has previously considered the outputs of both density dependent and density independent models in offshore wind farm assessments, where the evidence indicated it was appropriate to do so.
- 2.8. Therefore, as stated at ISH4 our position regarding density dependent versus density independent PVA outputs is that if there is clear evidence of the form and strength of density dependence operating on the focal population (colony) then we would (depending on the evidence provided) consider the outputs from density dependent models. However, it will also be important to consider whether there is any actual evidence that density dependence is acting on the focal population at the present time. We recommend using a density independent model where there is no information on population regulation for the focal population but careful consideration should be given to the potential for dispensatory population regulation. In the case of the colonies discussed during the Vanguard hearings (kittiwake at Flamborough and Filey Coast (FFC) SPA and lesser black-backed gull (LBBG) at Alde-Ore Estuary SPA), we have considered the density independent model outputs to be the most appropriate in previous offshore wind farm assessments.
- 2.9. Natural England re-confirmed that we were happy with the proposed methodology as described by the Applicant, however, noted that further comment would be provided following provision of the updated assessment.
- d. Question from examiner with regards to displacement of red-throated diver (RTD) both alone and incombination and the assessment undertaken for Thanet Extension Offshore Wind Farm.
- 2.10. Natural England confirmed that we are content with the proposed methodology presented by the Applicant.
- 2.11. Natural England also noted that in terms of seasonal restrictions concerning cable laying activities this was only in relation to Greater Wash SPA.

The Applicant notes this agreement from Natural England and the confirmation with regards cable laying activities.

- e. Question from examiner with regards to the updated assessment of displacement of auks at the FFC SPA.
- 2.12 Natural England confirmed that we are content with the proposed methodology presented by the Applicant.

The Applicant acknowledges Natural England's position.

- f. Natural England comments regarding the importance of supporting habitats
- 2.13. Natural England highlighted the need to consider impacts on the SPA not just in purely numeric terms such as an increase in baseline mortality, but also whether the SPA continues to be able to contribute across its extent to the favourable conservation status of the species for which the site is classified, which requires an emphasis on assessing whether an activity prevents the supporting habitats within the SPA from fulfilling that function.
- 2.14. Natural England confirmed that it would be useful to know how long cable installation activities might take particularly when within the Great Wash SPA. This would allow an assessment to be made of how significant this impact is.

The Applicant acknowledges these comments from Natural England.

With regards to response (2.13), the Applicant considers that sufficient detail to address these aspects have been provided in the Environmental Statement and additional submissions made during the Examination. With regards to response (2.14), the Applicant provided the following information in Section 2.9.1.3 of the Offshore Ornithology Assessment Update for Deadline 6 (document ExA; AS; 10.D6.17)

"...the actual duration of cable installation





Written submission Appli	cant's Response
2.15. Natural England also confirmed that we had no concerns with regards to the baseline information that has been provided.	through the SPA for Norfolk Vanguard is likely to be no longer than 6 weeks)." With regards to response (2.15) the Applicant welcomes this confirmation from Natural England.
 g. Question from examiner with regards to figures to be use the worse-case for the baseline) 2.16. Natural England confirmed that a matrix-style approach with the full range of values would be the most useful as it gives a clear image of likely range of impacts. 	
	as evidence based outputs as these are considered the simplest format for presenting these.
h. Question from examiner with regards to gannet cumulative	ve displacement
2.17. Natural England confirmed that we are content with the proposed methodology presented by the Applicant.	The Applicant acknowledges Natural England's position on this aspect.
i. Question from examiner with regards to update to apportioning rates for several species, including LBBG at Alde-Ore Estuary SPA and seasonal apportionment of ganne at FFC SPA.	t
2.18. Natural England confirmed that we are content with the proposed methodology presented by the Applicant as long as the full breeding season is used and the non-breedin season months are then adjusted accordingly to avoid doub counting.	
j. Question from examiner with regards to kittiwake at FFC ${\mbox{S}}$	PA and the use of RSPB tracking data
2.19. Natural England confirmed that discussions had been started with regards to what impacts might be generated from Norfolk Vanguard OWF alone and will be reviewing thi information for further discussions. 2.20. However, Natural England remain concerned with regards to the proposed methodology for cumulative impact proposing to apply a blanket figure of 26% to all offshore wind-farms within a 250km range, not least because this approach would seek to revise figures for other projects that had already been agreed in their Examinations.	Deadline 6 (and that to be submitted at Deadline 7, for the revised project layout (ExA; AS; 10.D7.21)) used the apportioning rates applied for the East Anglia THREE wind farm for wind farms other than Norfolk Vanguard,
2.21. In addition, Natural England noted that several wind- farms including Hornsea Project One, Hornsea Project Two and Hornsea Project Three all have apportioning rates far in excess of this figure.	
2.22. Natural England would question, therefore, if this approach is too simple to make a robust assessment.	
k. Question from examiner with regards to the screening res Nez SPA.	ponse for Bancs des Flandres SPA and Cap Gris-
2.23. Natural England stated that as these are both French SPAs, Natural England have not been concerned with them to date as the French authorities would provide a response the regard.	The Applicant acknowledges this response from Natural England, however it can also be confirmed that these SPAs have now been in included in the updated screening matrices





Applicant's Response

submitted at Deadline 6.5.

I. Question from examiner with regards to Natural England's review / update for guillemot and puffin population sizes at Hornsea Project Two.

- 2.24. In our response to the Applicant's auk and gannet displacement note (Appendix 3.3) Natural England noted that there were differences in the largest BDMPS/reference populations listed in the cumulative assessments of this appendix and those for the largest BDMPS figures for the UK North Sea and Channel BDMPS in Furness (2015) for guillemot and puffin. The Applicant had confirmed in its response to the Q3.23 of the Examining Authorities second round of questions that these figures were those reported by Natural England for the Hornsea Project Two wind farm (Natural England 2015, Written Submission for Deadline 6, 26th Nov 2015, Table 22). This was discussed with Natural England during a call on the 8th March following which Natural England were to review these figures and advise on their suitability.
- 2.25. Natural England has subsequently reviewed the BDMPS/reference figures presented for these two species in the Hornsea Project Two document and as stated in our response to the Applicant's response to Q3.23 (submitted at Deadline 5 [REP5-017]), we note that the population scale figures used by the Applicant of 2,045,078 for guillemot and 868,689 for puffin are those used by Natural England in its assessment at Hornsea Project Two (Natural England 2015). We note that these figures are for the largest population scale (all birds) and are the population estimates for UK colonies within North Sea BDMPS scale (see Table 1 of Natural England 2015).
- 2.26. Given that the cumulative auk displacement assessments presented by the Applicant in the auk displacement update, Appendix 3.3, are year round assessments, we consider it appropriate that the levels of impact are assessed against the largest population of individuals for each species predicted to be in North Sea waters in any season, which based on Natural England (2015) are considered to be:
- > Guillemot 2,045,078 (breeding note error in Table 2 of Natural England 2015: this should be breeding and not winter)
- > Razorbill 591,874 (migration)
- > Puffin 868,689 (breeding)
- 2.27. These figures are consistent with those used by the Vanguard Applicant in the cumulative assessments in the Applicant's Appendix 3.3.
- 2.28. Natural England confirmed that we are happy with the figures presented by the Applicant.

The Applicant acknowledges this response from Natural England and the confirmation that the appropriate numbers had been used in the assessment.

m. Further comments with regards to CRM

2.29. Natural England also highlighted that because of the revised WCS in terms of number of turbines all species

The Applicant acknowledges Natural England's response on this aspect. Updated assessment





Applicant's Response

previously assessed through CRM are subject to revised CRM.

- 2.30. Natural England stated that this had been discussed in the pre-hearing meeting and it was additionally agreed by the Applicant that for herring gull a cumulative assessment would be undertaken alongside an assessment alone.
- 2.31. Natural England also highlighted that CRM for non-migratory seabirds had also been discussed and Natural England were broadly happy with the Applicant's approach, with only minor clarifications required.

for the project alone, cumulatively and incombination was provided at Deadline 6 (ExA; AS; 10.D6.17) and for the project alone was further updated at Deadline 6.5 for the revised project layout (ExA; CRM; 10.D6.5.1). The cumulative and in-combination assessments will be submitted at Deadline 7 (ExA; AS; 10.D7.21). This will include herring gull, as requested by Natural England.

Additionally, at Deadline 6 an updated migratory non-seabird collision assessment was submitted (ExA; AS; 10.D6.18) which addressed Natural England's comments on the previous version (ExA; AS; 10.D3.6). Natural England has confirmed to the Applicant that the update has addressed all their outstanding concerns and that they are now in agreement with the Applicant that there will be no significant impacts or adverse effects on SPA integrity due to migratory non-seabird collision risk.

- ii. Displacement
- a. Question from examiner with regards to use of 100% displacement and 10% mortality for red-throated diver at Vanguard West and / or Vanguard East and West combined which equates to a moderate adverse effect and the Applicant's view on this.
- 2.32. Natural England confirmed that as definitive mortality rates are unknown we advise a range of figures between 1 and 10% and would continue to do so.
- 2.33. The Applicant confirmed that they would continue to use rates proposed by SNCBs, alongside their preferred rates to allow a comparison to be made.

The Applicant acknowledges Natural England's comments on this and can confirm that both Natural England's preferred precautionary rates and the Applicant's preferred evidence based ones have been provided.

- b. Question from examiner with regards to REP5-017, Natural England's advice in relation to red-throated diver mitigation measures
- 2.34. The Applicant asked for clarification from Natural England as to which stages of development this related to.
- 2.35. Natural England confirmed that these are mitigation measures that have been included in other examinations and primarily relate to Operations & Maintenance activities where very often fast moving boats are used to transit people out to site. This activity could have significant impacts on RTD.
- 2.36. Natural England also noted that we are not proposing these mitigation measures for larger cable installation style vessels.

The Applicant acknowledges Natural England's confirmation of this aspect which has been included in the draft DCO (see schedule 9 and 10, condition 14(1)(d)(vi)).

- c. Question from examiner with regards to additional disturbance and displacement from lighting impacts
- 2.37. Natural England had no further comments in this regard.

The Applicant acknowledges Natural England's position on this aspect.

- iii. Cumulative and in-combination effects.
- a. Request from examiner to provide update on our thoughts in this regard, including concerns with data for Hornsea Project Three and implications of this





Applicant's Response

- 2.38. Natural England confirmed that the Hornsea Project Three examination period closes on 2nd April. Natural England stated that the Hornsea Project Three offshore ornithology baseline surveys are incomplete and insufficient to adequately characterise the baseline, primarily because there are 4 months of missing data and therefore only one set of winter data. As a result of this it is not possible to rule out AEol. Natural England's position on this will not change before the end of the Hornsea Project Three examination.
- 2.39. Natural England emphasised that it is recognised that the Hornsea Project Three decision making process is outside of the Applicant's control and therefore we advise that the Applicant focuses on ensuring that the assessment and figures presented for the Norfolk Vanguard project alone are as robust as possible. In addition the Applicant should consider opportunities to minimise the project alone impacts as much as possible.
- 2.40. Natural England suggested that the Applicant could base their in-combination/cumulative assessment on where there is some degree of certainty in the figures presented, e.g. for East Anglia Three cumulative totals, and then adding the figures for both Norfolk Vanguard and Thanet Extension.
- 2.41. Alongside this the Applicant could run a separate assessment which includes Hornsea Project Three and then both figures could be presented. It was noted that Natural England would advise a high degree of scientific doubt in this scenario such that an Adverse Effect on Integrity couldn't be ruled out.
- 2.42. Natural England suggested that a broader decision needs to be made because Hornsea Project Three is impacting on all projects.
- 2.43. Natural England highlighted that we were already at incombination threshold for kittiwake from FFC SPA at the end of the East Anglia Three examination and therefore all subsequent projects continue to add to this cumulative collision total. However, it is up to the Applicant to determine/demonstrate how much of an addition to the incombination total their project makes.
- 2.44. Natural England also stated that there are several offshore windfarm NSIPs under examination at the same time which does set a precedent. Natural England therefore agrees with the Applicant that the building block approach makes undertaking the in-combination assessment and consideration of any potential mitigation measures challenging.
- 2.45. Natural England highlighted a previous more strategic approach undertaken under Section 36 of the Electricity Act (before OWFs becoming NSIPs) for three offshore windfarms impacting on the North Norfolk Coast SPA ['The Greater Wash AA: Impacts on Annex I Sandwich Terns 2012']. In this particular case Docking Shoal OWF did not gain consent as it had a greater environmental impact. Therefore, Natural

The Applicant acknowledges Natural England's position on this aspect. Updated assessment submitted at Deadline 6 (ExA; AS; 10.D6.17) presented cumulative and in-combination totals with and without Hornsea Project Three, using the values presented in that project's Environmental Statement, as advised by Natural England. The updated cumulative and in-combination assessment to be submitted at Deadline 7 will also follow this approach (ExA; AS; 10.F7.21).

In relation to the comments on the Building Block approach, in the Applicant's view the Building Block was previously dealt with in the context of projects that had been consented. Whereas in this context, the Norfolk Vanguard application and the Hornsea Project Three application are being considered on similar timescales; each application is likely to be with the Secretary of State for consideration at the same time (albeit recognising that the Secretary of State is likely to receive the Hornsea Project Three application first). Accordingly, and to address Natural England's concerns in this respect, the Applicant has produced in-combination assessment with figures that do not include Hornsea Project Three.





	4.5
	nt's Response
England would welcome the decision makers' collective consideration of OWF NSIPs which have interrelated environmental issues/impacts and are in the planning system at the same time, to enable the best environmental outcomes to be achieved.	
b. Question from examiner with regards to CRM for herring gu	II at Alde-Ore Estuary SPA
2.46. Natural England confirmed that a cumulative assessment on impacts at an EIA scale was still required, however, as herring gull is not a feature of Alde-Ore Estuary SPA there is no requirement for an HRA assessment to be undertaken. 2.47. Natural England noted that the Applicant has agreed to do this assessment.	The Applicant acknowledges Natural England's position on this aspect and can confirm project alone and cumulative assessment was provided at Deadline 6 (ExA; AS; 10.D6.17) and this will be updated at Deadline 7 for the revised project layout (ExA; AS; 10.D7.21).
c. Question from examiner with regards to the effects on gann from project alone	et at FFC SPA from operational displacement
2.48. Natural England highlighted that following conversations with the Applicant we believed that this would be addressed by information provided at Deadline 6. 2.49. At this stage Natural England have said that there is LSE alone and this should be reflected in the initial screening, however, we would need to see analysis before a conclusion can be reached as to whether that results in AEoI.	The Applicant acknowledges Natural England's position on this aspect and can confirm this assessment was provided at Deadline 6.
d. Question from examiner with regards to common scoter at 0	 Greater Wash SPA and AEoI
2.50. Natural England stated that there is a LSE for common scoter, however, we have sought mapping from the Applicant demonstrating the cable laying activities and vessel movements will not interact with common scoter populations, in order to rule out an AEoI.	The Applicant provided a figure at Deadline 2 (ExA; WQRApp23.1;10.D2.3) which presented the cable route overlaid on the common scoter distribution used to inform the designation of the SPA and this demonstrated that there would be no risk of an LSE due to cable installation. The Applicant does not consider any further assessment is required for this aspect.
e. Question from examiner with regards to preference of RSPB monitoring	for a site-specific meeting rather than strategic
2.51. Natural England agreed with the Applicant in this regard suggesting it was premature to flesh out an In Principle Monitoring Plan (IPMP).	The Applicant acknowledges Natural England's comment on this aspect and looks forward to further engagement on these matters.
2.52. However, after the Deadline 6 submissions the key issues should be identified and narrowed down so that we can identify what may need to be explored further.	
Natural England's Written Summary of Oral	The Applicant provided a draft Outline SIP for Network Foreign d and the NAMO's
Representations made at ISH4: Environmental Matters Agenda Item 7: Benthic ecology	for Natural England and the MMO's review on 3 rd April 2019 and has
Site Integrity Plan (SIP) for Haisborough, Hammond and Winterton SAC	subsequently sought to address comments in the version submitted at Deadline 7. Discussions between the Applicant, MMO
EIFCA Byelaw Area	and Natural England regarding the draft
 Cable protection - welcome the continued effort by 	Outline SIP are ongoing.

The Applicant notes that the EIFCA has

also submitted information regarding the

the Applicant to reduce cable protection to a more

realistic level of 5%, Natural England continued to





Applicant's Response

advise that 5% is a significant amount inside a designated site

 Natural England states that they cannot rule out an AEoI based on information provided up to Deadline
 5. byelaw area – see Section 2.15

- The Applicant notes that 5% is the maximum potential length of cable that may be unburied due to ground conditions and therefore require cable protection, however the actual extent and location of cable protection must be agreed with the MMO in consultation with Natural England in accordance with the Outline SIP as required under DCO Schedules 11 and 12 Condition 9(1)(m)
- The Applicant maintains that the wording of the DCO condition (Schedules 11 and 12, Condition 9(1)(m)) allows a conclusion of no AEoI to be made through the commitment from the Applicant that the relevant activity cannot commence until the MMO is satisfied that there would be no AEoI:

"The licensed activities, or any phase of those activities must not commence until a site integrity plan which accords with the principles set out in the outline Norfolk Vanguard Haisborough, Hammond and Winterton Special Area of Conservation Site Integrity Plan has been submitted to the MMO and the MMO (in consultation with the relevant statutory nature conservation body) is satisfied that the plan provides such mitigation as is necessary to avoid adversely affecting the integrity (within the meaning of the 2017 Regulations) of a relevant site, to the extent that sandbanks and Sabellaria spinulosa reefs are a protected feature of that site."

Discussions are ongoing between the Applicant, MMO and Natural England regarding the draft Outline SIP.

Oral Representations made at ISH5: draft Development Consent Order Hearings - Proposed arbitration procedures

As per our response to changes made to dDCO document provided at Deadline 5 [REP5-017], Natural England stated that as we are providing statutory advice to the decision making process being undertaken by BEIS and MMO, we believe that with the amended wording to the arbitration clause Natural England is now excluded from this process. Natural England raised further concerns, concluding that by moving certain elements to post consent discussions there is

As the Applicant has set out in previous submissions, the Applicant does not envisage a situation where Natural England would be subject to arbitration given that the MMO is the ultimate decision maker under the DMLs.

The Site Integrity Plans (pursuant to Condition 14(1)(m), Schedule 9-10, and Condition 9(1)(I), Schedule 11-12) contain detailed timetables for engagement with relevant consultees prior to submission of the plans for approval by the





Applicant's Response

a high probability that the MMO will need to make a decision which relates to HRA and if this results in AEoI being identified this is not a simple process to solve.

Natural England would support the MMO with regards to the concerns that they have raised about the subsequent changes that have been made to the dDCO as a result of the change to the arbitration clause.

We recognise that issues need to be resolved now as part of consenting process as expecting Natural England to respond in less than 20 working days may not be feasible with the number of OWF projects now being taken forwards.

Please note, this summary provides Natural England's response to Action Point 6 from ISH5: Draft Development Consent Order

MMO. The Applicant has also produced a note for Deadline 7 which summarises the relevance and appropriateness of the SIP in this context (document reference ExA; AS; 10.D7.19).

Oral Representations made at ISH5: draft Development Consent Order Hearings - further comments on the benthic SIP

Natural England remain concerned with regards to deferring impact analysis to post-consent discussions as for other cases this has created problems such that sites have been damaged beyond parameters of plans and will do so for more than 20 years. If we are saying AEoI and mitigation measures cannot be identified then you are looking at alternatives and IROPI which will not be solved within a 6 month period.

Natural England stated that we had held further internal discussions overnight to discuss the SIP and are of the view that the benthic SIP is very different to that for marine mammals where the in-combination requirements are outside of the Applicant's control and there are more viable options to mitigate any impacts. Whereas, a worst case scenario has been presented for benthic impacts and therefore will need to be considered by the RIES.

As it stands Natural England advises that the condition that has been put in does not alleviate our concerns with regards to AEoI.

The Applicant has provided further updates to the SIP for the HHW SAC to address comments from the MMO and Natural England. The Applicant has submitted this at Deadline 7 (document reference: 8.20).

The Applicant also refers Natural England to its Written Summary of ISH7 (document reference ExA; ISH7; 10.D7.2) and the bespoke note summarising the relevance and appropriateness of the SIP in this context (document reference ExA; AS; 10.D7.19).

Oral Representations made at ISH5: draft Development Consent Order Hearings - Any other dDCO matters

Natural England requested that clarity is needed regarding SIPs (and other key documents) in relation to Hornsea Project Three and other OWFs as currently the same terminology is used, but the documents do not include the same content. This is leading to misunderstandings across all parties.

The Applicant refers Natural England to its above submissions and its Written Summary of ISH5 (document reference: ExA;ISH5;10.D6.10) and ISH7 (document reference ExA; ISH7; 10.D7.2).

It must be remembered that each project is different and that there may be slight variations in approach which require different drafting to be adopted in the DMLs. Therefore consistency should be considered with a note of caution because it may not be appropriate or necessary to align the DMLs with those proposed for other projects in all cases.

Natural England's detailed comments in response to Action

The Applicant welcomes this advice and notes





Applicant's Response

Point 14 from ISH4: Position Statement on EIFCA byelaw issues including reference to relevant maps and brief overview of our position with regards to the proposed Defra management area.

that the byelaw does not legally restrict any activities other than bottom-towed fishing gear.

In accordance with advice from the MMO (see Section 2.10), the Applicant agrees with the MMO that, irrespective of the bye-laws, this issue is related to the need to appropriately assess the impacts to the HHW SAC prior to making a determination and the Applicant maintains that should be dealt with through the Outline SIP. Discussions regarding the Outline SIP are ongoing between the Applicant, MMO and Natural England.

The Applicant also notes that there remains uncertainty whether either the EIFCA or the DEFRA proposed areas will be adopted by the time of the Norfolk Vanguard consent determination.

Copy of Natural England and Joint Nature Conservation Committee's (JNCC) joint formal advice on Haisborough, Hammond and Winterton cSAC with regards to which areas should be managed as Annex I reef The Applicant has reviewed the submission and makes the following observations:

- As a result of the Evidence Plan Process, the Applicant was aware of the maps presented in the submission.
- Data sources referred to in the submission that were available to the Applicant (e.g. The East Coast Regional Environmental Characterisation (REC)) were included in the Norfolk Vanguard Sabellaria reef study provided in Appendix 7.2 of the Information to Support HRA report.
- The Applicant suggests the following extracts from the submission substantiate points made by the Applicant during the Examination:
 - o Annex A Pg 14 of 22 "The dynamic nature of the Reef feature presents challenges to precisely mapping its location at any instance in time and therefore the areas included represent our best judgement on those parts of the site that should be managed for the Annex I reef feature"

The Applicant maintains that this is a component of the uncertainty associated with the assessment of effects on the HHW SAC and highlights the importance of the SIP framework which allows for further





Written submission A	pplicant's Response
	consideration of the effects on the SAC based on latest available information prior to construction, including the pre-construction surveys. • Annex B Pg 19 of 22 "Sabellaria spinulosa reef extent is identified along the Baird Bacton pipeline, as in the HHW SAC SAD [Selection Assessment Document] and Regulation 35 package" Natural England's Deadline 4 submission states that S. spinulosa on cable protection is not natural and therefore not an Annex 1 feature. The Applicant accepts that this is the current position of the Statutory Natura Conservation Bodies (SNCB), however notes that the large priority area of area to be managed as reef which has been identified in relation to the DEFRA byelaw area, extensively tracks existing pipelines (see also the Applicants Written Summary of Oral Submissions: ISH 6—Environmental Matters, document reference ExA; ISH6; 10.D7.1) and as reflected in Natural England's Deadline 6 submission, Natural England acknowledges that S. spinulosa reef is found on an existing pipeline within the SAC. The Applicant also maintains that any reef, regardless of what it is growing on would have the same effect on biodiversity.
Copy of Natural England's formal advice on the use of ar adaptive approach to management in Haisborough Hammond and Winterton SAC	The Applicant has reviewed the submission and notes that the following extract from the submission substantiates points made by the Applicant during the Examination: "We [Natural England] recognise that confidence in our understanding of the extent and distribution of Annex I reef in this site is relatively low, in particular due to the low density of ground truthing. HHW was designated as an SAC relatively recently, its geographic location and size mean that it requires considerable resource to survey. We therefore do not have a complete baseline of feature extent and





Written submission A	oplicant's Response
	distribution." The Applicant maintains that this is a component of the uncertainty associated with
	the assessment of effects on the HHW SAC and highlights the importance of the SIP framework which allows for further consideration of the effects on the SAC based on latest available information prior to construction, including the pre-construction surveys.
Register entry UK0030395 under Regulation 19 of The Conservation of Offshore Marine Habitats and Species Regulations 2017	The Applicant was aware of the information provided in this submission and has taken it into account in the production of the
and	Information to Support HRA report (document 5.3).
Harbour Porpoise (<i>Phocoena phocoena</i>) possible Special of Conservation: Southern North Sea Draft Conservation Objectives and Advice on Activities	Area In accordance with ISH6 Action Point 25, the Applicant has submitted the requested JNCC & Natural England (2019) Harbour Porpoise (Phocoena phocoena) Special Area of Conservation: Southern North Sea Conservation Objectives and Advice on Operations

2.16 Cawston PC

Written submission

To date there has been no serious consideration offered to alternative routes for construction traffic to avoid the B1145 in Cawston, including the diversion proposal offered by Cawston Parish Council, also submitted to this inquiry for Deadline 5, as a positive solution to removing construction traffic from both windfarm projects.

Cawston Parish Council is keen to avoid a repeat of the inconclusive and unsatisfactory process of consultation throughout the recent Orsted Hornsea Three Planning Inquiry.

Applicant's Response

A full consideration of the diversion route proposed by Cawston Parish Council is provided as Appendix 2 to this document. In summary:

- In order for the running track to accommodate 2-way HGV movements on a daily basis for 3+ years, the running track would need to have a more robust specification to ensure longevity. This would require a greater volume of materials to be delivered and therefore an associated increase in the number of HGV movements for the purpose of running track construction (i.e. an increase to the peak of the HGV movements on the B1145), with resulting impacts on the local and wider road network.
- This increased timescale for retaining the running track for 3+ years and the change of use of the haul road to allow 2-way HGV movements and abnormal loads would increase impacts associated with construction noise, water quality at designated water bodies (crossing the Blackwater Drain which





Written submission	Applicant's Response
	feeds into the River Wensum Special Area of Conservation), flood risk (land drainage and soil storage within the functional floodplain), and ecological impacts to protected bat species related to delayed hedgerow reinstatement.
	• There are properties within 20m of the onshore cable corridor along this stretch (identified within the Parish Council's Deadline 5 submission). Disturbance effects as a result of the current construction methodology (sectionalised approach) can be mitigated due to the short period that construction works would take place adjacent to each property (1-2 weeks). However, if the running track were retained and adapted (upgraded) as outlined above in order to allow 2-way HGV movements this would represent a significant disturbance impact to these properties over 3+ years.
	The Applicant does acknowledge the constraints through Cawston along Link 34 and the potential amenity impacts. The Applicant has identified a range of traffic management measures that are required to manage potential cumulative impacts along Link 34, including enhanced pedestrian facilities, managed parking and road safety measures, avoiding term time school drop off and pick up times, as well as managing cumulative peak HGV flows, which would be subject to final agreement with NCC and will be captured within an update to the Outline Traffic Management Plan (document

2.17 Historic England

Written submission	Applicant's Response
Historic England's Deadline 6 submission provides the	While it is acknowledged that it could be
following requested changes to the DCO in order to provide	beneficial for DCOs to be consistent, the
consistency with Hornea Project Three and Thanet Extension	Applicant would note that the Norfolk
	Vanguard DCO was prepared in line with the
	consented East Anglia THREE Order. It is also
	noted that the DCOs for Thanet Extension and
	Hornsea Project Three are still draft and so
	may be subject to further change and in
	certain circumstances it may be the draft
	DCOs of Hornsea Three or Thanet Extension
	that have deviated from standard wording.
	Furthermore, there may be project specific



Written submission	Applicant's Response
	reasons for there to be slight differences between the Orders, however Norfolk Vanguard cannot comment on these.
Request that Condition 14(h) of Schedules 9 and 10 and Condition 10(2) of Schedules 11 and 12 are amended so that submission for approval is at least six months prior to the intended commencement of licensed activities.	The version of the dDCO submitted at Deadline 7 allows for at least 6 months for the MMO to determine an application for approval (see conditions 15(3) and 15(5) of Schedules 9 and 10 and conditions 9(3) and 9(5) of Schedules 11 and 12). There is a period of two months from submission of the application in which the MMO may request further information from the Applicant, and then a further period of 4 months from receipt of that information to determine the application, which equates to at least a 6 month period.
Schedule 9, 14(h)(vii) – "implementation of the Offshore Renewables Protocol for Reporting Archaeological Discoveries as set out by The Crown Estate including reporting of any wreck or wreck material during construction, operation and decommissioning of the authorised scheme;"	Implementation of Offshore Renewables Protocol for Reporting Archaeological Discoveries (ORPAD) is extensively referred to in the Offshore WSI (document 8.6) and therefore Norfolk Vanguard Ltd maintains that this commitment is already appropriately secured and therefore does not also require to be noted on the face of the DMLs. The Applicant has discussed this position with Historic England. Historic England stated "We understand the explanation provided to us as
Schedule 9, 18(2)(a) — "a high-resolution full sea floor coverage swath bathymetric survey to include a 100% coverage that meets the requirements of IHO S44ed Order 1a, and side-scan sonar survey of the area(s) within the Order limits within which it is proposed to carry out construction works and disposal activities under this licence;"	we have no further comment to offer". With regards to the addition of "highresolution" and "100% coverage", Norfolk Vanguard Ltd notes that the original wording mirrors that of IHO S44ed Order 1a and is therefore appropriate. The Applicant also notes that the details of the survey must be agreed with the MMO in consultation with Historic England through the production of the final WSI and therefore the Applicant maintains that this does not require to be noted on the face of the DMLs. The Applicant has discussed this position with Historic England. Historic England stated "We understand the explanation provided to us as
Schedule 9, 20(2)(e) (post construction monitoring) – "a	we have no further comment to offer". With regards to the addition of "disposal activities" the Applicant maintains that the commitments made within the Outline WSI (offshore) (document 8.6) allow for any appropriate requirement for monitoring to be considered and agreed with the MMO in consultation with Historic England postconsent. Monitoring of Archaeological Exclusion Zones





Written submission	Applicant's Response
bathymetric survey to monitor the effectiveness of archaeological exclusion zones identified to have been potentially impacted by construction works. The data shall be analysed by an accredited archaeologist as defined in the offshore written scheme of investigation required under condition 14(h)"	(AEZ)s is referred to in the In Principle Monitoring Plan (document 8.12) which also states "The principal mechanism for delivery of monitoring is through agreement on the offshore Written Scheme of Investigation (WSI)". The Applicant therefore maintains that this requirement is also already suitably secured and does not require to be noted on the face of the DMLs.
Historic England also notes matters of inconsistency between the Hornsea Project Three and Thanet Extension DCOs that are not related to the role and responsibilities of Historic England.	See section 2.1. The Applicant understands that the MMO has stated they are reviewing consistency and will respond at Deadline 7. The Applicant will review any submission by the MMO.