

Norfolk Vanguard Offshore Wind Farm

Statement of Common Ground

Natural England



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Glossary

| | |
|---------|---|
| AEol | Adverse Effect on Integrity |
| ALC | Agricultural Land Classification |
| BDMPS | Biologically Defined Minimum Population Size |
| BMV | Best and Most Versatile |
| CIA | Cumulative Impact Assessment |
| Cefas | Centre for Environment, Fisheries and Aquaculture Science |
| CoCP | Code of Construction Practise |
| CRM | Collision Risk Model |
| cSAC | Candidate Special Area of Conservation |
| DCO | Development Consent Order |
| DML | Deemed Marine Licence |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| ESS | Entry Level Stewardship Scheme |
| ETG | Expert Topic Group |
| ExA | Examining Authority |
| HDD | Horizontal Directional Drilling |
| HRA | Habitats Regulations Assessment |
| HVAC | High Voltage Alternating Current |
| HVDC | High Voltage Direct Current |
| LIDAR | Light Detection and Ranging |
| LSE | Likely Significant Effect |
| MarESA | Marine Evidence based Sensitivity Assessments |
| MarLIN | Marine Life Information Network |
| MCZ | Marine Conservation Zone |
| MMMP | Marine Mammal Mitigation Protocol |
| MMMZ | Marine Mammal Mitigation Zone |
| MMO | Marine Management Organisation |
| NV East | Norfolk Vanguard East |
| NV West | Norfolk Vanguard West |
| OCoCP | Outline Code of Construction Practice |
| OLEMS | Outline Landscape and Environmental Management Strategy |
| O&M | Operation and Maintenance |
| OWF | Offshore Wind Farm |
| PBR | Potential Biological Removal |
| PEI | Preliminary Environmental Information |
| PEIR | Preliminary Environmental Information Report |
| PVA | Population Viability Analysis |
| pSPA | potential Special Protection Area |
| RoC | Review of Consents |
| SAC | Special Area of Conservation |
| SCI | Site of Community Importance |
| SMP | Soil Management Plan |
| SNCB | Statutory Nature Conservation Bodies |

| | |
|------|-------------------------------------|
| SPA | Special Protection Area |
| SSSI | Site of Special Scientific Interest |
| SoCG | Statement of Common Ground |
| UXO | Unexploded Ordnance |
| WCS | Worst Case Scenario |

Terminology

| | |
|---|---|
| Array cables | Cables which link the wind turbines and the offshore electrical platform. |
| Landfall | Where the offshore cables come ashore at Happisburgh South. |
| Mobilisation area | Areas approx. 100 x 100 m used as access points to the running track for duct installation. Required to store equipment and provide welfare facilities. Located adjacent to the onshore cable route, accessible from local highways network suitable for the delivery of heavy and oversized materials and equipment. |
| National Grid overhead line modifications | The works to be undertaken to complete the necessary modification to the existing 400 kV overhead lines. |
| Necton National Grid substation | The existing 400 kV substation at Necton, which will be the grid connection location for Norfolk Vanguard. |
| Offshore accommodation platform | A fixed structure (if required) providing accommodation for offshore personnel. An accommodation vessel may be used instead. |
| Offshore cable corridor | The area where the offshore export cables would be located. |
| Offshore electrical platform | A fixed structure located within the wind farm area, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore. |
| Offshore export cables | The cables which bring electricity from the offshore electrical platform to the landfall. |
| Onshore cable route | The 45 m easement which will contain the buried export cables as well as the temporary running track, topsoil storage and excavated material during construction. |
| Onshore project substation | A compound containing electrical equipment to enable connection to the National Grid. The substation will convert the exported power from high voltage direct current (HVDC) to high voltage alternating current (HVAC), to 400 kV (grid voltage). This also contains equipment to help maintain stable grid voltage. |
| The OWF sites | The two distinct offshore wind farm areas, Norfolk Vanguard East and Norfolk Vanguard West. |
| Trenchless crossing zone | Temporary areas required for trenchless crossing works (e.g. HDD). |

1 INTRODUCTION

1. This Statement of Common Ground (SoCG) has been prepared between Natural England and Norfolk Vanguard Limited (hereafter ‘the Applicant’) to set out the areas of agreement and disagreement in relation to the Development Consent Order (DCO) application for the Norfolk Vanguard Offshore Wind Farm (hereafter ‘the project’).
2. This SoCG comprises an agreement log which has been structured to reflect topics of interest to Natural England on the Norfolk Vanguard DCO application (hereafter ‘the Application’). Topic specific matters agreed, not agreed and actions to resolve between Natural England and the Applicant are included. Points that are not agreed will be the subject of ongoing discussion throughout the examination process, wherever possible to resolve, or refine, the extent of disagreement between the parties.
3. A joint position statement between the Applicant and Natural England was submitted at Deadline 4 (document reference ExA; AS; 10.D4.8) which presented ongoing work and discussions being undertaken by both parties. As stated in the joint position statement, the following sections of the SoCG will be updated following the Issue Specific Hearing on 27th March 2019:
 - Issues relating to the Haisborough, Hammond and Winterton Special Area of Conservation (SAC) for;
 - Marine geology, oceanography and physical processes;
 - Benthic ecology; and
 - Onshore ecology (with associated Appendices).
4. No changes are proposed to fish and shellfish ecology or marine mammals at this time.
5. This submission, therefore reflects updates to the offshore ornithology SoCG (provided in Section 2.5) only and the rest remains as presented at Deadline 1.

1.1 The Development

6. The Application is for the development of the Norfolk Vanguard Offshore Wind Farm (OWF) and associated infrastructure. The OWF comprises two distinct areas, Norfolk Vanguard (NV) East and NV West (‘the OWF sites’), which are located in the southern North Sea, approximately 70 km and 47 km from the nearest point of the Norfolk coast respectively. The location of the OWF sites is shown in Chapter 5 Project Description Figure 5.1 of the Application. The OWF would be connected to the shore by offshore export cables installed within the offshore cable corridor from the OWF sites to a landfall point at Happisburgh South, Norfolk. From there, onshore cables

would transport power over approximately 60 km to the onshore project substation and grid connection point near Necton, Norfolk.

7. Once built, Norfolk Vanguard would have an export capacity of up to 1800 MW, with the offshore components comprising:
 - Wind turbines;
 - Offshore electrical platforms;
 - Accommodation platforms;
 - Met masts;
 - Measuring equipment (Light Detection and Ranging (LiDAR) and wave buoys);
 - Array cables;
 - Interconnector cables; and
 - Export cables.
8. The key onshore components of the project are as follows:
 - Landfall;
 - Onshore cable route, accesses, trenchless crossing technique (e.g. Horizontal Directional Drilling (HDD)) zones and mobilisation areas;
 - Onshore project substation; and
 - Extension to the existing Necton National Grid substation and overhead line modifications.

1.2 Consultation with Natural England

9. This section briefly summarises the consultation that the Applicant has had with Natural England. For further information on the consultation process please see the Consultation Report (document reference 5.1 of the Application).

1.2.1 Pre-Application

10. The Applicant has engaged with Natural England on the project during the pre-Application process, both in terms of informal non-statutory engagement and formal consultation carried out pursuant to Section 42 of the Planning Act 2008.
11. During formal (Section 42) consultation, Natural England provided comments on the Preliminary Environmental Information Report (PEIR) by way of a letter dated 11th December 2017.
12. Further to the statutory Section 42 consultation, several meetings were held with Natural England through the Evidence Plan Process.
13. Table 1 to Table 11 provide an overview of meetings and correspondence undertaken with Natural England. Minutes of the meetings are provided in

Appendices 9.15 to 9.26 (pre-Section 42) and Appendices 25.1 to 25.9 (post-Section 42) of the Consultation Report (document reference 5.1 of the Application).

1.2.2 Post-Application

14. As part of the pre-examination process, Natural England submitted a Relevant Representation to the Planning Inspectorate on the 31st August 2018. Natural England has also engaged throughout the Examination deadlines.
15. A series of meetings have been held with Natural England since the Application was submitted:
 - Drafting of the SoCG - 18th October 2018
 - Onshore Ecology - 21st January 2019
 - Haisborough Hammond and Winterton SAC - 23rd January 2019
 - Offshore Ornithology - 23rd January 2019
 - Onshore Ecology - 27th February 2019
 - Haisborough Hammond and Winterton SAC - 8th March 2019
 - Offshore Ornithology - 8th March 2019
16. This SoCG is a live document which will be updated throughout the examination process as the Applicant and Natural England work to resolve outstanding issues.

2 STATEMENT OF COMMON GROUND

17. Within the sections and tables below, the different topics and areas of agreement and disagreement between Natural England and the Applicant are set out.

2.1 Marine Geology, Oceanography and Physical Processes

18. The project has the potential to impact upon Marine Geology, Oceanography and Physical Processes. Chapter 8 of the Norfolk Vanguard Environmental Statement (ES) (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
19. Table 1 provides an overview of meetings and correspondence undertaken with Natural England regarding Marine Geology, Oceanography and Physical Processes.
20. Table 2 provides areas of agreement (common ground) and disagreement regarding Marine Geology, Oceanography and Physical Processes.
21. Minutes of Evidence Plan meetings can be found in Appendix 9.16 and Appendix 25.6 of the Consultation Report (document reference 5.1 of the Application).

Table 1 Summary of Consultation with Natural England in relation to Marine Geology, Oceanography and Physical Processes

| Date | Contact Type | Topic |
|--------------------------------|--|--|
| Pre-Application | | |
| 21 st March 2016 | Benthic and Geophysical Survey Scope Meeting | Discussion on the required scope of the geophysical surveys to inform the approach to the offshore surveys conducted in Summer/Autumn 2016 (see Appendix 9.16 of the Consultation Report). |
| 2 nd February 2017 | Email from the Applicant | Provision of the Marine Physical Processes Method Statement (see Appendix 9.2 of the Consultation Report). |
| 16 th February 2017 | Benthic and Intertidal Ecology, Fish Ecology, Marine Physical Processes and Marine Water and Sediment Quality Scoping Expert Topic Group Meeting | Discussion of Scoping responses and approach to Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) (see Appendix 9.16 of the Consultation Report). |
| 22 nd June 2017 | Email from the Applicant | Offshore HRA Screening (Appendix 5.1 of the Information to Support HRA Report (document 5.3)) provided for consultation. |
| 22 nd June 2017 | Email from the Applicant | Provision of draft PEIR documents (Chapter 8 and Appendix 10.1 of the ES (Fugro survey report) to inform discussions at the Norfolk Vanguard Benthic Ecology and Marine Physical Processes Expert Topic Group meeting. |

| Date | Contact Type | Topic |
|--------------------------------|---|--|
| 5 th July 2017 | Benthic and Intertidal Ecology and Marine Physical Processes PEI Expert Topic Group (ETG) Meeting | Discussion of HRA Screening (see Appendix 9.16 of the Consultation Report). |
| 16 th January 2018 | Email from the Applicant | Provision of the following draft technical reports to support the Information to Support HRA report: <ul style="list-style-type: none"> • Appendix 7.1 ABPmer Sandwave study; and • Appendix 7.2 Envision Sabellaria data review |
| 31 st January 2018 | Marine Physical Processes and Benthic Ecology HRA ETG meeting | PEIR feedback and comments on approach to HRA (see Appendix 25.6 of the Consultation Report). |
| 22 nd February 2018 | Email from the Applicant | Provision of draft Norfolk Vanguard Information to Support HRA (document 5.3). |
| 22 nd February 2018 | Letter from Natural England | Natural England advice regarding potential impacts from the offshore cable installation to Annex I habitat within the Happisburgh Hammond and Winterton SAC. |
| 15 th March 2018 | Email from Natural England | Natural England advice on <i>Sabellaria spinulosa</i> reef in Happisburgh, Hammond and Winterton SAC. |
| 23 rd March 2018 | Letter from Natural England | Feedback on the draft Information to Support HRA report. |
| Post-Application | | |
| 31 st August 2018 | Relevant Representation | Natural England's initial feedback on the DCO application. |
| 17 th October 2018 | Email from the Applicant | First draft SOCG provided by the Applicant |
| 18 th October 2018 | SoCG Meeting | Discussion regarding the drafting of the SoCG |
| 21 st November 2018 | Email from the Applicant | Second draft SOCG provided by the Applicant |
| 30 th November 2018 | Email from the Applicant | Clarification notes (Appendices 1-3 of the SoCG) provided by the Applicant |
| 23 rd January 2019 | SoCG Meeting | Ongoing discussions regarding the Haisborough Hammond and Winterton SAC – SoCG to be updated following the Issue Specific Hearing on 27th March 2019 |
| 8 th March 2019 | SoCG Meeting | |

Table 2 Statement of Common Ground - Marine Geology, Oceanography and Physical Processes

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|---|--|--|
| Site Selection and Project Design | | | |
| Landfall | Landfall at Happisburgh South is the most appropriate of the options available, avoiding the Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ). | Agreed | It is agreed by both parties that landfall at Happisburgh South is a viable option. |
| Landfall | The design of the landfall works will adopt a highly conservative approach to ensure cables do not become exposed as a result of erosion (see Appendix 1). A construction method statement, including cable landfall, must be agreed with the MMO prior to construction, as required under the Deemed Marine Licence (DML) Schedules 11 and 12 Part 4 Condition 9(c)(iv). | Agreed, following receipt of further information on 29/11/2018 (provided in Appendix 1) Natural England is satisfied that the specific issues raised in the Relevant Representation relating to the assessment of coastal erosion at Happisburgh have been resolved. | It is agreed by both parties that the design of the landfall works will adopt a suitably conservative approach to ensure cables do not become exposed as a result of erosion |
| Environmental Impact Assessment | | | |
| Existing Environment | Survey data collected for Norfolk Vanguard for the characterisation of Marine Geology, Oceanography and Physical Processes are suitable for the assessment and as agreed in during the survey scope meeting March 2016. | Agreed | It is agreed by both parties that sufficient survey data has been collected to undertake the assessment. |
| | The ES adequately characterises the baseline environment in terms of Marine Geology, Oceanography and Physical Processes | Agreed | It is agreed by both parties that the existing environment of Marine Geology, Oceanography and Physical Processes has been characterised appropriately for the assessment. |
| Assessment methodology | Appropriate legislation, planning policy and guidance relevant to Marine Geology, Oceanography and Physical Processes has been used. | Agreed | It is agreed by both parties that appropriate legislation has been considered. |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|--|--|
| | The list of potential impacts assessed for Marine Geology, Oceanography and Physical Processes is appropriate | Agreed | It is agreed by both parties that appropriate impacts on Marine Geology, Oceanography and Physical Processes have been assessed. |
| | <p>The impact assessment methodologies used provide an appropriate approach to assessing potential impacts of the proposed project. This includes:</p> <ul style="list-style-type: none"> The assessment uses expert judgement based upon knowledge of the sites and available contextual information (Zonal and East Anglia ONE studies and modelling); therefore no new modelling (e.g. sediment plumes or deposition) was undertaken for the assessment The definitions used of sensitivity and magnitude in the impact assessment are appropriate. <p>These are in line with the Method Statement provided in February 2017 (see Appendix 9.2 of the Consultation Report (Application document 5.1) and as discussed during expert topic group meetings.</p> | Agreed | It is agreed by both parties that the impact assessment methodologies used in the EIA are appropriate. |
| | <p>The worst case scenario used in the assessment for Marine Geology, Oceanography and Physical Processes is appropriate.</p> <p>This includes a conservative assessment for cable installation based on pre-</p> | Agreed, although it is noted by Natural England that there is currently no evidence that sandwave levelling ensures cables remain buried and therefore there is no future need for reburial or cable protection. | It is agreed by both parties that the worst case scenario used in the assessment for Marine Geology, Oceanography and Physical Processes is appropriate. |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--------------------------|--|
| | <p>sweeping as well as potential reburial requirements.</p> <p>As discussed in the Change Report (document reference Pre-ExA;Change Report;9.3), the increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 8 Marine Geology, Oceanography and Physical Processes.</p> | <p>Agreed</p> | <p>It is agreed by both parties that the proposed increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 8 Marine Geology, Oceanography and Physical Processes.</p> |
| | <p>Regardless of whether the project is installed in a single or two-phased scenario, export cable installation will be undertaken for one cable pair at a time and therefore the main difference between the scenarios would potentially be the duration between the installation of one HVDC cable pair and the next.</p> <p>The export cable corridor is in a dynamic environment and therefore sandwave bedforms are continually being formed, modified, converging and bifurcating as they migrate through the cable corridor area. The scale of the sand movement through the cable corridor is of such large magnitude that the impact of the bed levelling operations during installation will be of comparatively minimal impact to the form and function of the sandwaves and sand bank feature regardless of the phasing scenario.</p> | <p>To be confirmed</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|--|----------------|
| | <p>Cable protection will only be required at cable crossing locations and in the unlikely event that hard substrate (i.e. areas that are not Annex 1 Sandbank) is found along the cable route that cannot be avoided.</p> <p>The Scour Protection and Cable Protection Plan (required under DCO Schedules 9 and 10 Part 4 Condition 14(1)(e) and Schedules 11 and 12 Part 4 Condition 9(1)(e)) provides the mechanism for the volume, extent and location of cable protection to be agreed with the MMO in consultation with Natural England prior to construction.</p> | <p>Agreed that cable protection should only be used at essential locations. Discussions are ongoing on this topic.</p> <p>Natural England note that past experience has shown that additional cable protection has often been required beyond that which is expected.</p> | |
| | <p>The resolution of available data is not sufficient to confirm that there are no areas of hard substrate in the cable corridor and therefore a contingency of 10% of the cable length requiring cable protection has been included in order to be conservative. The total volume of cable protection in the Haisborough Hammond and Winterton SAC is 0.003% of the SAC area as shown in Table 7.4 of the Information to Support HRA report.</p> <p>It should be noted that the Sweetman I case law (C258/11 para 46) only specifically refers to permanent loss of priority natural habitat, which Article 1(d) of the Habitats Directive defines as 'natural habitat types in danger of disappearance' for whose conservation</p> | <p>Not agreed, Natural England does not agree to 10% contingency. Further consideration of permanent habitat loss from cable protection is included in 5.03 Para 380 of the HRA. However, please note that as a result of recent case law (Sweetman I) the permanent loss of Annex I habitat could be considered as an Adverse Effect on Integrity (AEoI).</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|---------------------|--|--|---|
| | <p>the European Union has ‘particular responsibility’ (Ibid, para 42), which is not applicable in this case as Annex 1 Sandbank and Annex 1 Reef are not priority natural habitats. In addition, Waddenzee case law states (C-127/02 para 47) that a project which is not likely to undermine the site’s nature conservation objectives cannot be considered to have an adverse effect on site integrity - The small proportion of cable protection proposed for Norfolk Vanguard would not interfere with the physical processes of the sandbanks or adversely affect the communities of the sandbank which are of low diversity and therefore the conservation status would not be affected.</p> | | |
| | <p>Cable protection is assessed as permanent habitat loss in Chapter 10 Benthic Ecology, section 10.7.5 due to the likelihood of leaving cable protection <i>in situ</i> following decommissioning.</p> | <p>Agreed</p> | <p>It is agreed by both parties that habitat loss from cable protection should be considered a permanent impact</p> |
| Assessment findings | <p>The characterisation of sensitivity for Marine Geology, Oceanography and Physical Processes receptors (i.e. the East Anglian Coast and relevant designated sites) is appropriate.</p> | <p>Not agreed as too overarching given further points raised.</p> | |
| | <p>Norfolk Vanguard Limited acknowledges that the scale of suspended sediment should be classified as high. This results in a medium magnitude of effect taking into account the duration, frequency and reversibility which are classified as negligible. This has no change to the</p> | <p>Agreed</p> <p>Natural England states that near field effects of suspended sediment in the offshore cable corridor should be of greater scale than the ‘low’ classification identified in the ES due to the large volume of proposed dredging and material released.</p> | <p>It is agreed by both parties that near field effects of suspended sediment in the offshore cable corridor should be of greater scale than the ‘high’ classification.</p> |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|------------------------------------|--|--|---|
| | resulting negligible impact significance on Marine Geology, Oceanography and Physical Processes receptors. | | |
| | Norfolk Vanguard Limited acknowledges that the scale of seabed level changes should be classified as medium as stated by Natural England in their relevant representation. This has no change to the overall magnitude classification which remains low taking into account the duration, frequency and reversibility which are classified as negligible and therefore no change to the impact significance presented in the ES. Appendix 7.1 of the Information to Support HRA report shows that Sandwaves are expected to recover within approximately 1 year. | Not agreed. Natural England does not agree that the magnitude of seabed level changes is low given the large volumes dredged. | |
| | The impact significance conclusions of negligible significance on marine geology, oceanography and physical processes receptors for Norfolk Vanguard alone are appropriate. | Not agreed as too overarching given further points raised. | |
| Cumulative Impact Assessment (CIA) | The plans and projects considered within the CIA are appropriate and as agreed during the expert topic group meeting in July 2017. | Agreed | It is agreed by both parties that the plans and projects included in the CIA are appropriate. |
| | The CIA methodology is appropriate. Chapter 8 Marine Geology, Oceanography and Physical Processes of the ES states that theoretical bed level changes of up to 2mm are estimated as a result of cumulative impacts of Norfolk Vanguard | Agreed, with the exception that combined suspended sediment increases associated with aggregates and Norfolk Vanguard cable installation should be considered for Haisborough Hammond and Winterton SAC. | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|--|--|---|
| | cable installation and dredging at nearby aggregate sites. This level of effect has no potential to affect the Marine Geology, Oceanography and Physical Processes of the Haisborough Hammond and Winterton SAC as stated in the Information to Support HRA report (document 5.3). | | |
| | The cumulative impact conclusions of negligible significance are appropriate. | Not agreed as too overarching given further points raised. | |
| Habitats Regulations Assessment (HRA) | | | |
| Screening of Likely Significant Effect (LSE) | The approach to HRA Screening is appropriate. The following site is screened in for further assessment as agreed during the expert topic group meeting in July 2017: Haisborough, Hammond and Winterton SAC | Agreed | It is agreed by both parties that the designated sites and potential effects screened in for further assessment are appropriate. |
| Assessment of Adverse Effect on Integrity | The approach to the assessment of AEoI is appropriate. | Agreed | It is agreed by both parties that the approach to the assessment of potential adverse effects on site integrity presented in the Information to Support HRA report (document 5.3) are appropriate |
| | The physical processes of Annex 1 Sandbanks in the Haisborough, Hammond and Winterton SAC has the potential to recover from construction activities, within the range of natural variation. See comments on phasing in the Assessment Methodology section above. | Agreed, noting that there is limited empirical evidence and sandbank recovery should be monitored (see monitoring below). It is also not clear how single build vs phased build and either option in combination with Norfolk Boreas has been assessed. | It is agreed by both parties that the physical processes of Annex 1 Sandbanks in the Haisborough, Hammond and Winterton SAC has the potential to recover from construction activities, within the range of natural variation. |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|----------------------------------|---|---|--|
| | The small scale of cable protection assessed will not interfere with the physical processes (e.g. bed level, morphology, sediment transport) associated with the Annex 1 Sandbanks. | Not agreed. Natural England does not agree there will be negligible impact on the sandbank feature and relevant attributes (volume, extent, morphology etc. described in the supplementary advice on conservations objectives ¹). | |
| | The conclusions of no AEOL in the Information to Support HRA report (document 5.3), both for Norfolk Vanguard alone and in-combination, are appropriate. | Not Agreed | |
| Mitigation and Management | | | |
| Monitoring | <p>The In Principle Monitoring Plan (document 8.12), provides an appropriate framework to agree monitoring with the MMO in consultation with Natural England</p> <p>As stated in the In Principle Monitoring Plan (document 8.12), swath-bathymetric survey would be undertaken pre- and post-construction in order to monitor changes in seabed topography, including any changes as a result of sand wave levelling.</p> <p>It is acknowledged that the purpose of the post-construction monitoring is to address</p> | Agreed | It is agreed by both parties that the In Principle Monitoring Plan (document 8.12), provides an appropriate framework to agree monitoring with the MMO in consultation with Natural England. |

1

<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK0030369&SiteName=hais&SiteNameDisplay=Haisborough%2c+Hammond+and+Winterton+SAC&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=>

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|---------------------------|--|--|--|
| | evidence gaps in this area as well as for engineering purposes. | | |
| Mitigation and Management | <p>As stated in the Site Characterisation Report (document 8.15) all seabed material arising from the Haisborough, Hammond and Winterton SAC during cable installation would be placed back into the SAC using an approach, to be agreed with the Marine Management Organisation (MMO) in consultation with Natural England.</p> <p>The Haisborough, Hammond and Winterton SAC is not a closed system and it presently has sediment both entering and leaving it around the boundaries. The proposed works are some distance from the boundaries (at over 6 km from the southern boundary) and are unlikely to bring about any disruption to the transport regime. Therefore, the movement in and out of the Haisborough SAC as occurs at present will continue, irrespective of the proposed dredging or disposal activities as discussed in Information to Support HRA report Appendix 7.1 ABPmer Sandwave Study.</p> <p>The methods for sediment disposal would be agreed through the Cable Specification, Installation and Monitoring Plan, required under the draft DCO Schedules 9 and 10 Part 4 Condition 14(1)(g) and Schedules 11 and 12 Part 4 Condition 9(1)(g) and would</p> | Only agreed if material remains in the site after deposition, modelling will need to demonstrate this. | It is agreed by both parties that seabed material arising from the Haisborough, Hammond and Winterton SAC during cable installation would be placed back into the SAC using an approach, to be agreed with the MMO in consultation with Natural England. |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|---|----------------|
| | <p>be based on latest evidence, engineering knowledge and pre-construction surveys.</p> <p>The Scour Protection and Cable Protection Plan is a live document which will be updated as the final design of the project develops and must be agreed with the MMO prior to construction.</p> <p>Further detail on the locations of cable protection and the habitats in these locations will be developed based on the pre-construction surveys and design developments post consent.</p> | <p>Under review based on Hornsea Project Three.</p> | |

2.2 Benthic and Intertidal Ecology

22. The project has the potential to impact upon Benthic and Intertidal Ecology. Chapter 10 of the Norfolk Vanguard ES (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
23. Table 3 provides an overview of meetings and correspondence undertaken with Natural England regarding Benthic and Intertidal Ecology.
24. Table 4 provides areas of agreement (common ground) and disagreement regarding Benthic and Intertidal Ecology.
25. Minutes of Evidence Plan meetings can be found in Appendix 9.16 and Appendix 25.6 of the Consultation Report (document reference 5.1 of the Application).

Table 3 Summary of Consultation with Natural England in relation to Benthic and Intertidal Ecology

| Date | Contact Type | Topic |
|--------------------------------|--|--|
| Pre-Application | | |
| 21 st March 2016 | Benthic and Geophysical Survey Scope Meeting | Discussion on the required scope of the benthic surveys to inform the approach to the offshore surveys conducted in Summer/Autumn 2016 (see Appendix 9.16 of the Consultation Report). |
| 21 st March 2016 | Letter from Natural England | Feedback on benthic survey methodology. |
| 20 th April 2016 | Letter from Natural England | Review of the Geophysical and Grab Sampling Impact Assessment. |
| 2 nd February 2017 | Email from the Applicant | Provision of the Benthic Ecology Method Statement (see Appendix 9.2 of the Consultation Report). |
| 16 th February 2017 | Benthic and Intertidal Ecology, Fish Ecology, Marine Physical Processes and Marine Water and Sediment Quality Scoping Expert Topic Group Meeting | Discussion of Scoping responses and approach to EIA/HRA (see Appendix 9.16 of the Consultation Report). |
| 27 th February 2017 | Email from Natural England | Natural England's position on Haisborough, Hammond and Winterton SAC. |
| 8 th March 2017 | Email from Natural England | Natural England's advice on Cromer Shoal MCZ |
| 22 nd June 2017 | Email from the Applicant | Offshore HRA Screening (Appendix 5.1 of the Information to Support HRA report) provided for consultation. |

| Date | Contact Type | Topic |
|--------------------------------|--|--|
| 22 nd June 2017 | Email from the Applicant | Provision of draft documents (Chapter 8 of the PEIR and Appendix 10.1 of the ES (Fugro survey report)) to inform discussions at the Norfolk Vanguard Benthic Ecology and Marine Physical Processes Expert Topic Group meeting. |
| 5 th July 2017 | Benthic and Intertidal Ecology and Marine Physical Processes PEI ETG Meeting | Discussion of HRA Screening. (see Appendix 9.16 of the Consultation Report). |
| 16 th January 2018 | Email from the Applicant | Provision of the following draft technical reports to support the Information to Support HRA report: <ul style="list-style-type: none"> • Appendix 7.1 ABPmer Sandwave study; and • Appendix 7.2 Envision Sabellaria data review |
| 31 st January 2018 | Marine Physical Processes and Benthic Ecology HRA ETG meeting | PEIR feedback and comments on approach to HRA (see Appendix 25.6 of the Consultation Report). |
| 13 th February 2018 | Email from Natural England | Confirmation from Natural England that the standard best practice advice to the aggregates industry is a 50m buffer around <i>Sabellaria spinulosa</i> reef. |
| 19 th February 2018 | Email from Natural England | Provision of example Site of Community Importance (SCI) Position Statement in relation to sandbanks from the Dogger Bank Teesside OWF. |
| 22 nd February 2018 | Email from the Applicant | Provision of draft Norfolk Vanguard Information to Support Habitats Regulations Assessment (HRA) (document 5.3). |
| 22 nd February 2018 | Letter from Natural England | Natural England advice regarding potential impacts from the offshore cable installation to Annex I habitat within the Happisburgh Hammond and Winterton SAC. |
| 15 th March 2018 | Email from Natural England | Natural England advice on <i>Sabellaria spinulosa</i> reef in Happisburgh, Hammond and Winterton SAC. |
| 23 rd March 2018 | Letter from Natural England | Feedback on the draft Information to Support HRA report |
| Post-Application | | |
| 31 st August 2018 | Relevant Representation | Natural England's initial feedback on the DCO application. |
| 17 th October 2018 | Email from the Applicant | First draft SOCG provided by the Applicant |
| 18 th October 2018 | SoCG Meeting | Discussion regarding the drafting of the SoCG |
| 21 st November 2018 | Email from the Applicant | Second draft SOCG provided by the Applicant |
| 23 rd January 2019 | SoCG Meeting | |

| Date | Contact Type | Topic |
|----------------------------|--------------|--|
| 8 th March 2019 | SoCG Meeting | Ongoing discussions regarding the Haisborough Hammond and Winterton SAC – SoCG to be updated following the Issue Specific Hearing on 27th March 2019 |

Table 4 Statement of Common Ground - Benthic and intertidal ecology

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|---|--|---|
| Site Selection and Project Design | | | |
| Landfall | Landfall at Happisburgh avoids impacts on the Cromer Shoal Chalk Beds MCZ | Agreed | It is agreed by both parties that landfall at Happisburgh avoids impacts on the Cromer Shoal Chalk Beds MCZ |
| Environmental Impact Assessment | | | |
| Existing Environment | Survey data collected for Norfolk Vanguard for the characterisation of Benthic and Intertidal Ecology are suitable for the assessment and as agreed in the survey planning meeting in March 2016 and the expert topic group meeting in February 2017. | Agreed | It is agreed by both parties that sufficient survey data has been collected to undertake the assessment. |
| | <p>The ES adequately characterises the baseline environment in terms of Benthic and Intertidal Ecology.</p> <p>For the purposes of the EIA, the site characterisation has identified the potential extent and location of <i>S. spinulosa</i> reef as far as reasonably practicable. This has allowed the EIA to assess potential impacts on <i>Sabellaria</i> reef.</p> <p>The assessment does not discount “low reef”. Figure 7.2 of the Information to Support HRA report presents a map of potential <i>Sabellaria</i> reef extent based on medium to high confidence of reef presence (N.B. this includes reef of any reefiness characteristic, including low). <i>Sabellaria</i> reef identified during the Norfolk Vanguard benthic surveys in 2016 was found to be of low or medium reefiness and this is included in the assessment.</p> | Agreed, although noting the uncertainty associated with <i>S. spinulosa</i> reef mapping due to the ephemeral nature of the reef, the use of a range of datasets, and the fact that the applicant has only assessed medium/high quality reef as reef | It is agreed by both parties that the ES adequately characterises the baseline environment in terms of Benthic and Intertidal Ecology, although noting the uncertainty associated with <i>S. spinulosa</i> reef mapping due to the ephemeral nature of the reef and the use of a range of datasets. |
| | The approach to <i>S. spinulosa</i> reef mapping is appropriate to inform the EIA based on the data available. | Not agreed. Natural England has uncertainty associated with <i>S. spinulosa</i> reef mapping due to the ephemeral nature of the reef the | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|------------------------|--|---|---|
| | The assessment does not discount “low reef”. It should be noted however that by definition, “low reef” is inherently patchy (with only 10-20% coverage, Gubbay (2007) ²) and therefore increases the potential for micrositing. Medium reef also has high potential for micrositing, being classified by 20-30% coverage. | use of a range of datasets, and the fact that the applicant has only assessed medium/high quality reef as reef. | |
| | The mapping of potential <i>S. spinulosa</i> reef by Envision on behalf of Norfolk Vanguard Limited identifies potential reef areas which are largely consistent with areas Natural England has identified (as shown on Figure 2.1 below). | Agreed | It is agreed by both parties that the mapping of potential <i>S. spinulosa</i> reef by Envision on behalf of Norfolk Vanguard Limited identifies potential reef areas which are largely consistent with areas Natural England has identified. |
| | <p><i>S. spinulosa</i> is an ephemeral, rapidly growing opportunistic species; pre-construction surveys targeted at establishing the presence, location and extent of <i>S. spinulosa</i> reef habitats are therefore required to enable effective micrositing where possible.</p> <p>The assessment provides consideration of the impacts if micrositing is possible and if it is not possible (see Assessment Findings sections below).</p> <p>A cable specification, installation and monitoring plan, must be agreed with the MMO in consultation with Natural England as discussed under ‘Mitigation and Management’ below. This will provide the mechanism to agree cable routing/micrositing.</p> | <p>Not agreed, parameters/clear commitments are required in the DCO rather than the simple statement “where possible”.</p> <p>Natural England would want to see that all Annex I <i>S. spinulosa</i> will be avoided.</p> <p>The impact on <i>Sabellaria spinulosa</i> reef needs to be fully assessed if micro-siting is not possible and cable installation is still permitted.</p> | |
| Assessment methodology | Appropriate legislation, planning policy and guidance relevant to Benthic and Intertidal Ecology has been used. | Agreed | It is agreed by both parties that appropriate legislation has been considered. |
| | The list of potential impacts on Benthic and Intertidal Ecology assessed is appropriate. | Agreed, subject to consideration of cleaning activities (see below). | It is agreed by both parties that the list of potential impacts on Benthic and Intertidal Ecology assessed is appropriate, with the exception of clean activities (see below) |

² Gubbay (2007) Defining and managing *Sabellaria spinulosa* reefs: Report of an inter-agency workshop 1-2 May, 2007

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|---|--|
| | Operational cleaning of offshore infrastructure would consist of jet washing with seawater and therefore, only natural materials would enter the marine environment i.e. marine growth, bird guano and seawater. Whilst it is not possible to quantify the exact volume of the materials to be deposited, due to the small scale of the deposit that will be mixed with seawater, it is considered that such a deposit will quickly dissipate and is not capable of being deposited in sufficient volume to be capable of affecting water quality. No chemicals would be used in this process. The number of estimated operational visits are included as part of the operation and maintenance (O&M) activities described in Chapter 5, section 5.4.18. | Not agreed, details are still required of the volumes of material being deposited in the marine environment. | |
| | The impact assessment methodology is appropriate, and is in line with the Method Statement provided in February 2017 (see Appendix 9.2 of the Consultation Report (Application document 5.1) and agreed during the topic group meeting in February 2017. | Agreed | It is agreed by both parties that the impact assessment methodologies used in the EIA are appropriate. |
| | The worst case scenario used in the assessment for Benthic and Intertidal Ecology is appropriate. | Agreed | It is agreed by both parties that the worst case scenario used in the assessment is appropriate |
| | As discussed in the Change Report (document reference Pre-ExA;Change Report;9.3), the increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 10 Benthic Ecology. | Agreed | It is agreed by both parties that the proposed increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 10 Benthic Ecology. |
| | Cable protection may either be installed during installation or maintenance, up to the total volume assessed in Chapter 10 Section 10.7.5 Potential Impacts during Operation (including Section 10.7.5.1, Permanent loss of seabed habitat through the presence of seabed infrastructure in the OWF sites and Section 10.7.5.2, | Not agreed Natural England suggests that no cable protection associated with repairs has been included within the assessment and therefore should not be permitted in the DML. | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|---------------------|--|---|---|
| | <p>Permanent loss of seabed habitat through the presence of seabed infrastructure in the offshore cable corridor).</p> <p>It is the Applicant's preference to cut and remove redundant cables where possible. This requires agreement from the owners of the redundant cable, and therefore until this can be agreed post consent, an assumption that nine existing cables will be crossed has been assessed in order to provide a conservative assessment. The cable installation methodology will be agreed with the MMO through the Construction Method Statement.</p> <p>The Scour Protection and Cable Protection Plan will be updated as the final design of the project develops and must be agreed with the MMO prior to construction. This will include justification of the location, type and volume/area of essential cable protection based on crossing agreements and preconstruction surveys.</p> | <p>Agreed</p> <p>Natural England advises that where there are out of service cables, in the Haisborough Hammond and Winterton SAC, it would be better to reduce impacts by cutting cables rather than introducing unnecessary hard substrate to cross redundant cables. In addition, where strictly necessary the type of cable protection should be selected on the basis on least environmental impact at each particular location.</p> | <p>It is agreed by both parties that it is preferable to cut and remove redundant cables where possible subject to agreement from the cable owner(s).</p> |
| Assessment findings | <p>The characterisation of receptor sensitivity is appropriate.</p> <p>Chapter 10, Table 10.15 (mentioned in the Natural England relevant representation) refers to the sensitivity of receptors identified in NV East where <i>S. spinulosa</i> individuals were recorded. Individuals are less sensitive than reef and therefore have been classified as low sensitivity. Tables 10.14 and 10.16 refer to the sensitivity of receptors identified in NV West and the offshore cable corridor, respectively, where <i>S. spinulosa</i> reef has been identified. <i>S. spinulosa</i> in these areas has been identified as having medium sensitivity in accordance with the Marine Life Information Network (MarLIN) Marine Evidence based Sensitivity Assessments (MarESA).</p> <p>The magnitude of effect is correctly identified.</p> | <p>Mostly agreed, however all references in the document should note that <i>S. spinulosa</i> reef has medium sensitivity to heavy smothering and habitat change and high sensitivity to habitat loss.</p> <p>In addition, Natural England disagree with some of the sensitivity assessments in table 10.7.2, for example coarse sediment has high sensitivity to habitat change as does subtidal sand. We advise that 10.7.5.2.2 and Table 10.21 is changed to reflect this.</p> <p>Agreed, noting the change in the scale of suspended sediment and seabed level changes in relation to</p> | <p>It is agreed by both parties that the magnitude of effect on benthic ecology is correctly identified.</p> |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|---|---|
| | | the offshore cable corridor discussed in Section 2.1. | |
| | There would be no permanent loss of <i>S. spinulosa</i> reef as this is an ephemeral species which is likely to recolonise, as agreed during the Expert Topic Group meeting on the 31 st January 2018 (Appendix 25.6 of the Consultation Report). | Not agreed. Evidence presented to date is in relation to recover of individuals and not Annex I reef. And particularly disagree due potential for cable protection. | |
| | There would be no temporary habitat loss of <i>S. spinulosa</i> reef if micro-siting is possible. The magnitude would be low if micrositing is not possible through a small proportion of reef | Not agreed | |
| | The impact significance conclusions of negligible or minor adverse for Norfolk Vanguard alone are appropriate. | Not agreed | |
| CIA | The plans and projects considered within the CIA are appropriate as agreed during the expert topic group meeting in July 2017. | Agreed | It is agreed by both parties that the plans and projects included in the CIA are appropriate. |
| | The CIA methodology is appropriate. See position below regarding the conclusion of a low magnitude. | Not agreed. In- combination Natural England do not agree that there will be a low impact magnitude in terms of HHW SAC when Boreas is considered in combination as the export cable footprint will be 11% of the cable corridor running through the SAC and doesn't take into account the interest features impacted. | It is agreed by both parties that the CIA methodology is appropriate. |
| | The cumulative impact conclusions of negligible or minor significance are appropriate. | Not agreed. In- combination Natural England do not agree that there will be a low impact magnitude in terms of HHW SAC when Boreas is | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|---|--|--|
| | <p>The footprint of Norfolk Vanguard temporary disturbance within the Haisborough, Hammond and Winterton SAC would be up to 4.86km² as shown in Table 10.12 of ES Chapter 10. The footprint for Norfolk Boreas in the SAC would be the same.</p> <p>It should be noted that recovery is likely to have occurred, or at least commenced, following the first cable installation before subsequent phases of temporary disturbance from cable installation occur (for the second phase of Norfolk Vanguard and then Norfolk Boreas installation). The total area of the Haisborough Hammond and Winterton SAC is 1,468km² and the area of Sandbanks within the SAC is 678km². Given the small proportion and temporary nature of disturbance from Norfolk Vanguard and Norfolk Boreas cable installation, it has been concluded to result in a low magnitude impact.</p> | <p>considered in combination as the export cable footprint will be 11% of the cable corridor running through the SAC and doesn't take into account the interest features impacted.</p> <p>Natural England considers that impacts should be measured against the interest feature not the whole site.</p> | |
| Habitats Regulations Assessment (HRA) | | | |
| Screening of LSE | <p>The approach to HRA Screening is appropriate. The following site is screened in for further assessment as agreed during the expert topic group meeting in July 2017:</p> <ul style="list-style-type: none"> Haisborough, Hammond and Winterton SAC. | Agreed | It is agreed by both parties that the designated sites and potential effects screened in for further assessment are appropriate. |
| Assessment of Adverse Effect on Integrity | <p>The approach to the assessment of AEoI is appropriate.</p> <p>The communities of Annex 1 Sandbanks in the Haisborough, Hammond and Winterton SAC will recover as the physical processes of the Sandbanks recover within the range of natural variation as the communities are habituated to highly mobile sediments.</p> | <p>To be confirmed</p> <p>Not agreed, Natural England acknowledges that the mobile nature of this particular sandbank system would make it more likely to recover from changes in structure than less mobile ones. But, there are no empirical data that relate to interventions of similar spatial and temporal scale to the proposals and for this particular sandbank system to support the modelling. Therefore, Natural England continues to have</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|---|--|
| | <p>Based on available data, micrositing around <i>S. spinulosa</i> reef is likely to be possible. However, it is acknowledged that <i>S. spinulosa</i> reef extent may change prior to construction of Norfolk Vanguard and therefore pre-construction surveys are required to determine the extent of <i>S. spinulosa</i> reef at that time. A cable specification, installation and monitoring plan, must be agreed with the MMO in consultation with Natural England as discussed under 'Mitigation and Management' below. This will provide the mechanism to agree cable routing/micrositing.</p> | <p>residual concerns in relation to the overall impacts to the form and function of the Annex I sandbank sandwave fields and their potential recoverability.</p> <p>Agreed on the basis of survey data collected to date there should be room to microsite around reef in the cable corridor. Although it should be noted and taken into consideration by the decision-maker now that this may not be the case pre-construction and therefore there is an outstanding risk to the project</p> | <p>It is agreed by both parties that on the basis of survey data at this point there should be room to microsite around reef in the cable corridor, although noting that this may not be the case pre-construction. The cable specification, installation and monitoring plan will provide the mechanism to agree cable routing/micrositing with the MMO in consultation with Natural England.</p> |
| | <p>In the unlikely event that micrositing around <i>S. spinulosa</i> reef is not possible, a small proportion of reef may be temporarily disturbed. <i>S. spinulosa</i> in its individual and reef forms, is known to be ephemeral and opportunistic and can be expected to recover/recolonise within the range of natural variation. Therefore, a small proportion of temporary disturbance to <i>S. spinulosa</i> reef would not cause an adverse effect on the restoration objective of the Haisborough, Hammond and Winterton SAC.</p> <p>The following references provide examples of evidence that <i>S. spinulosa</i> reef can be expected to recover/recolonise Tillin and Marshall, 2015; OSPAR Commission, 2010; Holt, 1998; Cooper <i>et al.</i>, 2007; Pearce <i>et al.</i>, 2007).</p> <p>As stated in Natural England's position, there is a high likelihood that <i>Sabellaria spinulosa</i> reef will</p> | <p>Not agreed, there is currently a restore objective for reef features of HHW SAC. Site management measures are being developed for other operations likely to damage the interest features of the site and will be implemented in the future. In the absence of those pressures there is a high likelihood that <i>Sabellaria spinulosa</i> reef will recover/develop. One such management measure that is being considered is the use of fisheries byelaws to protect areas where <i>Sabellaria spinulosa</i> reef have been shown to be regularly present. Therefore it is hoped that more extensive <i>Sabellaria spinulosa</i> reefs will be restored in these areas, and</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|----------------|
| | <p>recover/develop following cessation of disturbance from fisheries. This would also apply following cable installation.</p> | <p>that existing encrusting and low quality reef will develop into higher quality reef habitat. Natural England would therefore advise that cable installation activities are avoided in these areas.</p> <p>In addition, the evidence presented in the HRA to support conclusions on recoverability relates only to individuals/abundance, but not to reef. Thus we have limited confidence in the ability of reef to recover from cable installation activities. Therefore, we further advocate that the standard mitigation measure of avoidance is adhered to.</p> | |
| | <p>Cable protection would not affect the potential of <i>S. spinulosa</i> reef to recover within the Haisborough, Hammond and Winterton SAC as <i>S. spinulosa</i> reef can be expected to colonise cable protection as an artificial substrate, in accordance with the UK Biodiversity Action Plan Priority Habitat Description for <i>S. spinulosa</i> Reefs (JNCC, 2016³):</p> <p><i>“S. spinulosa requires only a few key environmental factors for survival in UK waters. Most important seems to be a good supply of sand grains for tube building, put into suspension by strong water movement....The worms need some form of hard substratum to which their tubes will initially be attached, whether bedrock, boulders, artificial substrata, pebbles or shell fragments.”</i></p> | <p>Not agreed, Natural England does not consider the colonisation of sub-sea structures as beneficial as it is not natural change. However, we do agree that colonisation of new structures is likely to only be minor adverse significance. The cable protection in the first instance will result in loss of habitat. This will be considered permanent loss of underlying habitat if the cable protection is not removed. In addition if the plan is to remove the cable protection this would also result in removal of any <i>Sabellaria</i></p> | |

³ <http://jncc.defra.gov.uk/page-5706>

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|---|----------------|
| | <p>As <i>S. spinulosa</i> is an ephemeral, rapidly growing opportunistic species, individuals and reef can be expected to recover following cable maintenance, if required.</p> <p>As required under condition 9(g) of the DMLs, a Cable Specification, Installation and Monitoring Plan, must be agreed with the MMO which would include a risk based approach to the management of cables during O&M.</p> <p>The following references provide examples of evidence that <i>S. spinulosa</i> reef can be expected to recover/recolonise Tillin and Marshall, 2015; OSPAR Commission, 2010; Holt, 1998; Cooper <i>et al.</i>, 2007; Pearce <i>et al.</i>, 2007).</p> | <p><i>spinulosa</i> which may have colonised the structure</p> <p>Not agreed, the evidence presented in the HRA to support conclusions on recoverability relates only to individuals/abundance, but not to reef. Thus we have limited confidence in the ability of reef to recover from cable installation activities. Therefore, we further advocate that the standard mitigation measure of avoidance is adhered to.</p> | |
| | <p>The conclusions of no adverse effect on site integrity in the Information to Support HRA report (document 5.3) are appropriate.</p> | <p>Not agreed. Both the applicant and Natural England have identified several impact pathways that could impact on the Annex I Sandbank and/or Reef features, when considered alone and cumulatively. However, Natural England has concerns in relation to the applicant's use of data sets, the over-reliance on the evidence presented, and assessment of the impacts against the conservation objectives for the designated site, which has resulted in a disagreement between the Applicant and Natural England on the significance of these impacts.</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|----------------------------------|---|--|---|
| | | Therefore Natural England is unable to agree with the conclusions within the Habitats Regulation Assessment that there will be no adverse effect on the integrity Haisborough Hammond and Winterton SAC Annex I sandbanks and reef features both alone and in-combination. | |
| Mitigation and Management | | | |
| Mitigation and Management | A 50m buffer from <i>S. spinulosa</i> reef is proposed for disposal of sediment in accordance with advice provided by Natural England by email on 13 th February 2018. | Agreed, but please also see Point 17 of Appendix 2 of Natural England's Rel. Rep. | |
| | The Scour Protection and Cable Protection Plan is a live document which will be updated as the final design of the project develops and agreed with the MMO prior to construction. This will include justification of the location and volume/area of essential cable protection based on crossing agreements and preconstruction surveys. | Not Agreed | |
| | The Conditions of the DMLs (Schedules 9, 10, 11 and 12; Part 4) state that a cable specification, installation and monitoring plan, must be agreed with the MMO. This includes a detailed cable laying plan, incorporating a burial risk assessment to ascertain suitable burial depths and cable laying techniques. This gives the MMO and their advisors the opportunity to input to the cable laying plan including the cable route and potential for micrositing. | Agreed, noting that on the basis of current survey data micrositing around reef in cable corridor should be possible but due to its ephemeral nature, this may not be the case pre-construction. | It is agreed by both parties that the cable specification, installation and monitoring plan gives the MMO and their advisors the opportunity to input to the cable laying plan including the cable route and potential for micrositing. |
| | The DCO/DML should reflect the project design assessed in the EIA, including the contingency for cable protection which was identified in response to advice from Natural England during the Evidence Plan Process. A cable specification, installation and monitoring plan, must also be agreed with the MMO. This includes a | Not agreed Natural England supports the consideration and assessment of the impacts of a realistic worst case scenario (WCS) as this enables the examining authority to understand the full implications of an application prior to granting | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|------------|---|---|--|
| | <p>detailed cable route and laying plan, incorporating a burial risk assessment to ascertain suitable burial depths, cable laying techniques and cable protection.</p> <p>This process will rely on pre-construction survey data. It gives the MMO and their advisors the opportunity to input to the cable laying plan, ensuring only essential works are permitted prior to construction, including only allowing essential cable protection.</p> | <p>consent. However, it should not necessarily follow that this WCS then forms the basis of the DCO/DML conditions. Natural England's view is that the DCO/DML should only include protection that is deemed essential, such as that required for cable crossings, and that any additional requirement post-consent is dealt with through a robust revision to the Scour Protection and Cable Protection Plan when the project parameters are clearly defined and the full range of mitigation options can be fully considered.</p> | |
| Monitoring | The In Principle Monitoring Plan (document 8.12), provides an appropriate framework to agree monitoring with the MMO in consultation with Natural England | Agreed | It is agreed by both parties that the In Principle Monitoring Plan (document 8.12), provides an appropriate framework to agree monitoring with the MMO in consultation with Natural England. |

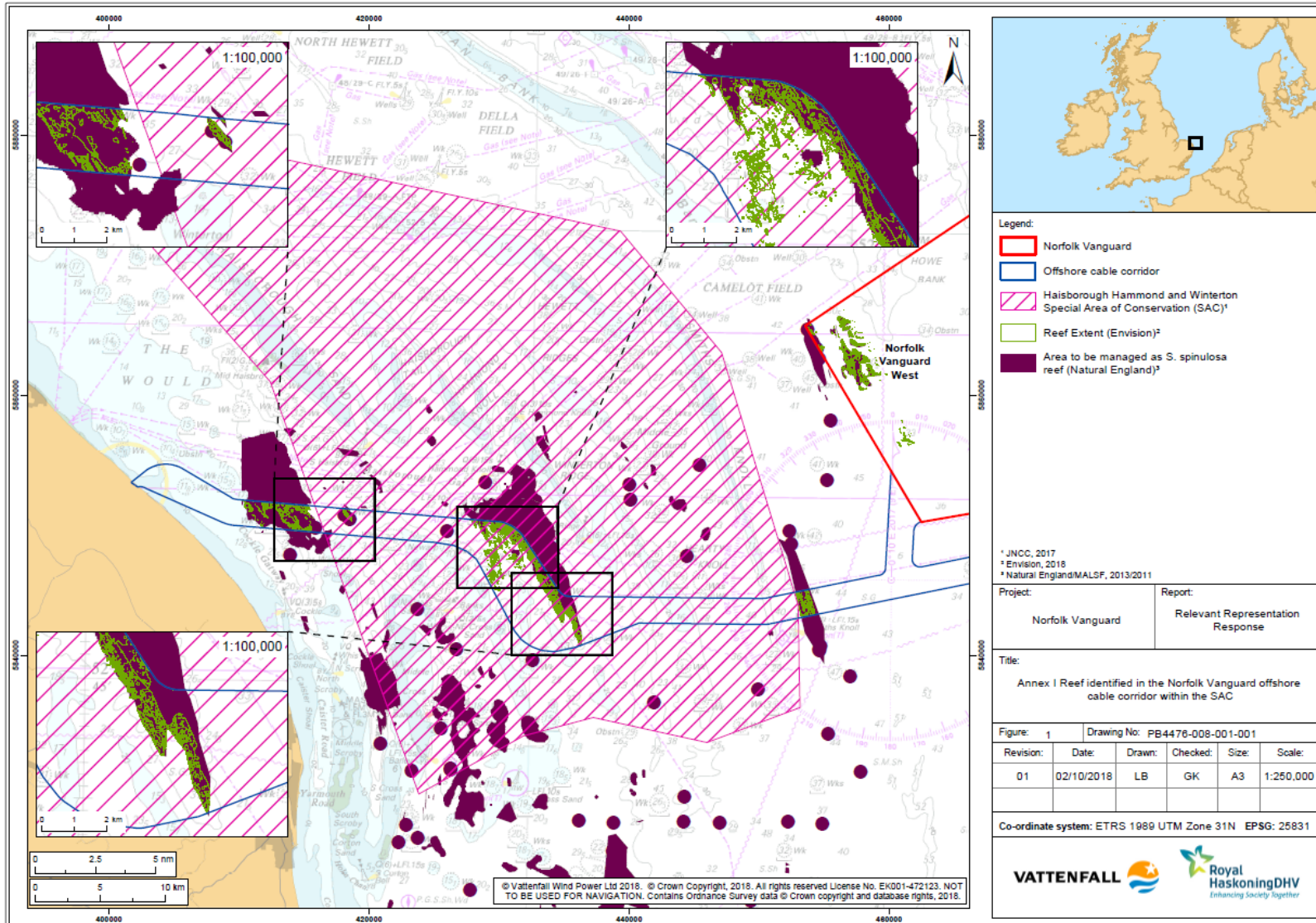


Figure 2.1 *Sabellaria spinulosa* reef mapping by the Applicant and Natural England

2.3 Fish and Shellfish Ecology

26. The project has the potential to impact upon Fish and Shellfish Ecology. Chapter 11 of the Norfolk Vanguard ES (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
27. Table 5 provides an overview of meetings and correspondence undertaken with Natural England regarding Fish and Shellfish Ecology.
28. Table 6 provides areas of agreement (common ground) and disagreement regarding Fish and Shellfish Ecology.
29. Minutes of Evidence Plan meetings can be found in Appendix 9.16 of the Consultation Report (document reference 5.1 of the Application).

Table 5 Summary of Consultation with Natural England in relation to Fish and Shellfish Ecology

| Date | Contact Type | Topic |
|--------------------------------|--|---|
| Pre-Application | | |
| 21 st March 2016 | Benthic and Geophysical Survey Scope Meeting | Agreement that no further fish surveys were required to inform the EIA. |
| 2 nd February 2017 | Email from the Applicant | Provision of the Fish Ecology Method Statement (see Appendix 9.2 of the Consultation Report). |
| 16 th February 2017 | Benthic and Intertidal Ecology, Fish Ecology, Marine Physical Processes and Marine Water and Sediment Quality Scoping Expert Topic Group Meeting | Discussion of Scoping responses and approach to EIA/HRA (minutes provided in Appendix 9.16 of the Consultation Report). |
| Post-Application | | |
| 31 st August 2018 | Relevant Representation | Natural England's initial feedback on the DCO application. |
| 17 th October 2018 | Email from the Applicant | First draft SOCG provided by the Applicant |
| 18 th October 2018 | SoCG Meeting | Discussion regarding the drafting of the SoCG |
| 21 st November 2018 | Email from the Applicant | Second draft SOCG provided by the Applicant |

Table 6 Statement of Common Ground - Fish and shellfish

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|---|--------------------------|---|
| Environmental Impact Assessment | | | |
| Existing Environment | The ES adequately characterises the baseline environment in terms of Fish and Shellfish Ecology. No site specific survey data is required for the characterisation of Fish and Shellfish Ecology as agreed by email on 13 th April 2016. | Agreed | It is agreed by both parties that the existing environment for fish and shellfish has been characterised appropriately for the assessment. |
| Assessment methodology | Appropriate legislation, planning policy and guidance relevant to Fish and Shellfish Ecology has been used. | Agreed | It is agreed by both parties that appropriate legislation has been considered. |
| | The list of potential impacts on Fish and Shellfish Ecology assessed is appropriate | Agreed | It is agreed by both parties that appropriate impacts on fish and shellfish have been assessed. |
| | The impact assessment methodology is appropriate, and is in line with the Method Statement provided in February 2017 (see Appendix 9.2 of the Consultation Report (Application document 5.1) and agreed during the topic group meeting in February 2017. | Agreed | It is agreed by both parties that the impact assessment methodologies used in the EIA are appropriate. |
| | The worst case scenario used in the assessment for Fish and Shellfish Ecology is appropriate. | Agreed | It is agreed by both parties that the worst case scenario used in the assessment is appropriate |
| | As discussed in the Change Report (document reference Pre-ExA;Change Report;9.3), the increase in the maximum number of piles per offshore electrical platform from six to 18 per platform (36 in total for two platforms) does not affect the conclusions of ES Chapter 11 Fish and Shellfish Ecology. | Agreed | It is agreed by both parties that the proposed increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 11 Fish and Shellfish Ecology. |
| Assessment findings | The characterisation of receptor sensitivity is appropriate. | Agreed | It is agreed by both parties that fish and shellfish sensitivity is appropriately characterised. |
| | The magnitude of effect is correctly identified. | Agreed | It is agreed by both parties that the magnitude of effects on fish and |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|------------------------------------|---|--|--|
| | | | shellfish are appropriately characterised. |
| | The impact significance conclusions of negligible or minor adverse for Norfolk Vanguard alone are appropriate. | Agreed | It is agreed by both parties that the impact significance for fish and shellfish is appropriately characterised for Norfolk Vanguard alone. |
| Cumulative Impact Assessment (CIA) | The plans and projects considered within the CIA are appropriate. | Agreed | It is agreed by both parties that the plans and projects included in the CIA are appropriate. |
| | The CIA methodology is appropriate. | Agreed | It is agreed by both parties that the CIA methodology is appropriate. |
| | The cumulative impact conclusions of negligible or minor significance are appropriate. | Agreed | It is agreed by both parties that the impact significance for fish and shellfish is appropriate for cumulative impacts. |
| Mitigation and Management | | | |
| Mitigation and Management | Given the impacts of the project, the embedded mitigation outlined in Section 11.7.1 of Chapter 11 is adequate. | Agreed | It is agreed by both parties that the embedded mitigation proposed is appropriate. |
| Monitoring | <p>Given the minor impacts of the project, no monitoring is proposed for fish and shellfish ecology.</p> <p>The In Principle Monitoring Plan provides framework to agree monitoring post consent.</p> | Agreed as Natural England acknowledges the applicant will seek to address these concerns post consent. as Natural England is concerned that no further monitoring or independent surveys are proposed regarding Fish and Shellfish ecology within the In Principle Monitoring Plan. Sandeel and herring habitat is of particular interest as these are important prey species including for harbour porpoise of the Southern North Sea cSAC (candidate Special Area of Conservation) /SCI. However Natural England would defer to Cefas on this issue. | It is agreed by both parties that the In Principle Monitoring Plan (document 8.12), provides an appropriate framework to agree monitoring with the MMO in consultation with Natural England. |

2.4 Marine Mammals

30. The project has the potential to impact upon Marine Mammals. Chapter 12 of the Norfolk Vanguard ES (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
31. Table 7 provides an overview of meetings and correspondence undertaken with Natural England regarding Marine Mammals.
32. Table 8 provides areas of agreement (common ground) and disagreement regarding Marine Mammals.
33. Minutes of Evidence Plan meetings can be found in Appendix 9.24 and Appendix 25.9 of the Consultation Report (document reference 5.1 of the Application).

Table 7 Summary of Consultation with Natural England in relation to Marine Mammals

| Date | Contact Type | Topic |
|--------------------------------|---|---|
| Pre-Application | | |
| 21 st March 2016 | Meeting | Discussion on the required aerial survey methodology (see Appendix 9.17 of the Consultation Report). |
| 2 nd February 2017 | Email from the Applicant | Provision of the Marine Mammals Method Statement (Appendix 9.13 of the Consultation Report). |
| 15 th February 2017 | Marine Mammals Scoping Expert Topic Group Meeting | Discussion of the scoping responses and approach to EIA/HRA (minutes provided in Appendix 9.24 of the Consultation Report). |
| 22 nd June 2017 | Email from the Applicant | Provision of HRA Method Statement (Appendix 9.13 of the Consultation Report) to inform discussions at the Marine Mammals Topic Group meeting. |
| 6 th July 2017 | Marine Mammals pre-PEI ETG Meeting | Marine mammal HRA Screening agreed and approach to HRA discussed (minutes provided in Appendix 9.24 of the Consultation Report). |
| 25 th October 2017 | Email from the Applicant | Provision of the Marine Mammals PEIR Chapter. |
| 8 th December 2017 | Marine mammal ETG Conference call | Marine mammal PEIR comments and approach to HRA. |
| 3 rd January 2018 | Email from Natural England | Written advice on approach to the marine mammal HRA and clarifying PEIR feedback following meeting on the 8 th December 2017. |
| 23 rd March 2018 | Letter from Natural England | Feedback on the draft Information to Support HRA report. |
| 26 th March 2018 | Marine Mammal ETG Conference Call | Discussion of feedback on the draft Information to Support HRA for Marine Mammals (minutes provided in Appendix 25.9 of the Consultation Report). |

| Date | Contact Type | Topic |
|--------------------------------|--------------------------|---|
| 13 th April 2018 | Email from the Applicant | Provision of draft In Principle Southern North Sea cSAC Site Integrity Plan (document 8.17) for review. |
| Post-Application | | |
| 31 st August 2018 | Relevant Representation | Natural England's initial feedback on the DCO application. |
| 17 th October 2018 | Email from the Applicant | First draft SOCG provided by the Applicant |
| 18 th October 2018 | SoCG Meeting | Discussion regarding the drafting of the SoCG |
| 21 st November 2018 | Email from the Applicant | Second draft SOCG provided by the Applicant |

Table 8 Statement of Common Ground - Marine mammals

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|--|---|--|
| Environmental Impact Assessment | | | |
| Existing Environment | Survey data collected for Norfolk Vanguard for the characterisation of marine mammals are suitable for the assessment. | Agreed | It is agreed by both parties that sufficient survey data has been collected to undertake the assessment. |
| | The ES adequately characterises the baseline environment in terms of marine mammals. | Agreed In addition to project specific surveys, sufficient background characterisation data from previous strategic surveys have been included. Species assessed are harbour porpoise, grey seal and harbour seal. | It is agreed by both parties that the existing environment for marine mammals has been characterised appropriately for the assessment. |
| Assessment methodology | Appropriate legislation, planning policy and guidance relevant to marine mammals has been used. | Agreed | It is agreed by both parties that appropriate legislation has been considered. |
| | The list of potential impacts on marine mammals assessed is appropriate. | Agreed | It is agreed by both parties that appropriate impacts on marine mammals have been assessed. |
| | Harbour porpoise, grey seal and harbour seal are the only species of marine mammal required to be considered in the impact assessment. | Agreed Other marine mammal species are at such low density that it is not necessary to assess further. | It is agreed by both parties that appropriate species of marine mammal have been assessed. |
| | The reference populations as defined in the ES are appropriate. | Agreed | It is agreed by both parties that appropriate reference populations have been used in the assessment. |
| | The approach to underwater noise modelling and assessment of impacts from pile driving noise for marine mammals follows current best practice and is therefore appropriate for this assessment as agreed during the expert topic group meeting in February 2017. | Agreed | It is agreed by both parties that the approach to underwater noise impact assessment is appropriate |
| | The impact assessment methodology is appropriate. | Agreed | It is agreed by both parties that the impact assessment methodology is appropriate |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|------------------------------------|---|--------------------------|---|
| | The worst case scenario for Norfolk Vanguard alone used in the assessment for marine mammals is appropriate. | Agreed. | It is agreed by both parties that the worst case scenario used in the assessment is appropriate |
| | As discussed in the Change Report (document reference Pre-ExA;Change Report;9.3), the increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 12 Marine Mammals. | Agreed | It is agreed by both parties that the proposed increase in the maximum number of piles per offshore electrical platform from six to 18 (36 in total for two platforms) does not affect the conclusions of ES Chapter 12 Marine Mammals. |
| | Unexploded Ordnance (UXO) clearance is considered in the EIA to provide a conservative assessment but would be subject to additional licencing once the nature and extent of UXO present is known following pre-construction surveys. This licencing would be supported by a UXO Marine Mammal Mitigation Protocol (MMMP) | Agreed | It is agreed by both parties that UXO clearance will be licenced separately |
| Assessment findings | The characterisation of receptor sensitivity is appropriate. | Agreed | It is agreed by both parties that marine mammal sensitivity is appropriately characterised for each species and impact. |
| | The magnitude of effect is correctly identified. | Agreed | It is agreed by both parties that the magnitude of effects on marine mammals are appropriately characterised. |
| | The impact significance conclusions of negligible or minor for Norfolk Vanguard alone are appropriate. | Agreed | It is agreed by both parties that the impact significance for marine mammals is appropriately characterised for Norfolk Vanguard alone. |
| Cumulative Impact Assessment (CIA) | The plans and projects considered within the CIA are appropriate. | Agreed | It is agreed by both parties that the plans and projects included in the CIA are appropriate. |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|--|---|--|
| | <p>The CIA methodology is appropriate.</p> <p>The cumulative impact conclusions of negligible or minor significance are appropriate.</p> <p>The Site Integrity Plan (DCO Schedules 9 and 10 Part 4 Condition 14(1)(m) and Schedules 11 and 12 Part 4 Condition 9(1)(l)) provides the framework to agree appropriate mitigation measures based on the latest guidance and provides the mechanism for the MMO to ensure that disturbance can be limited to an acceptable level, as piling cannot commence until the MMO is satisfied that there would be no adverse effect on integrity.</p> <p>As outlined in the In Principle Site Integrity Plan (Table 2.1 of document 5.3), it is proposed that the Site Integrity Plan would be updated to capture all relevant assessments and mitigation measures. This will include updating the in-combination assessment, taking into account the conclusions of the RoC process.</p> | <p>Agreed</p> <p>Not agreed, it is the view of Natural England that the assessment of any future plan or project, such as Norfolk Vanguard, is unable to fully complete any in-combination assessment and Habitat Regulation Assessments until: -</p> <p>The RoC consent process has concluded and the predicted level of disturbance to the Southern North Sea cSAC from the consented projects is agreed; and</p> <p>b) A mechanism is in place to ensure that disturbance can be limited to an acceptable level.</p> | <p>It is agreed by both parties that the CIA methodology is appropriate.</p> |
| Habitats Regulations Assessment (HRA) | | | |
| Screening of LSE | <p>The Approach to HRA Screening is appropriate. The following sites are screened in for further assessment:</p> <ul style="list-style-type: none"> • Southern North Sea cSAC/SCI • Humber Estuary SAC • The Wash and North Norfolk Coast SAC | Agreed | It is agreed by both parties that the designated sites and potential effects screened in for further assessment are appropriate. |
| Assessment of Adverse Effect on Integrity | The approach to the assessment of AEoI is appropriate. | Agreed in part, however, as a result of the in-combination effect of underwater noise during the construction period at the project (from piling and UXO clearance), the Information to Support the HRA indicates that | It is agreed by both parties that the approach to the assessment of potential adverse effects on site integrity presented in the |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|--|
| | | there is potential for LSE. Natural England advises that without the Site Integrity Plan and a mechanism to control subsea noise from multiple sources, there could be the potential for an adverse effect on the integrity of the Southern North Sea cSAC because of potential impacts on harbour porpoise. This is not an issue unique to the project and work will need to be undertaken to reduce the noise levels of multiple wind farms potentially constructing at the same time. This has been reflected in the Environmental Statement. | Information to Support HRA report (document 5.3) are appropriate |
| | The reference populations as defined in the Information to Support HRA report are appropriate. | Agreed | It is agreed by both parties that appropriate reference populations have been used in the Information to Support HRA report. |
| | The conclusions of the Information to Support HRA report are appropriate for Norfolk Vanguard alone. | Agreed | It is agreed by both parties that there would be no AEol as a result of Norfolk Vanguard alone |
| | <p>The conclusions of the In-combination Assessment provided in the Information to Support HRA report are appropriate.</p> <p>The Site Integrity Plan (DCO Schedules 9 and 10 Part 4 Condition 14(1)(m) and Schedules 11 and 12 Part 4 Condition 9(1)(l))) provides the framework to agree appropriate mitigation measures based on the latest guidance and provides the mechanism for the MMO to ensure that disturbance can be limited to an acceptable level, as piling cannot commence until the MMO is satisfied that there would be no adverse effect on integrity.</p> | Not agreed. Effectively the Worst Case Scenario (WCS) presented in the HRA will be that all consented projects and those in the planning system will undertake 'noisy' pre-construction site preparation and construction activities at the same time which will almost certainly result in an Adverse Effect on Integrity (AEol). We recognise that this is an unrealistic WCS because for no other reason it is not technically feasible. However, it does remain probable that two, or more, projects will wish to undertake noisy activities at the same time and depending on the combination of projects there remains a high risk of an AEol. | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|----------------------------------|--|--|--|
| | <p>As outlined in the In Principle Site Integrity Plan (Table 2.1 of document 5.3), it is proposed that the Site Integrity Plan would be updated to capture all relevant assessments and mitigation measures. This will include updating the in-combination assessment, taking into account the conclusions of the RoC process.</p> | <p>It is also the view of NE that the assessment of any future plan or project, such as Norfolk Vanguard, is unable to fully complete any in-combination assessment and Habitat Regulation Assessments until: -</p> <p>The RoC consent process has concluded and the predicted level of disturbance to the Southern North Sea cSAC from the consented projects is agreed; and</p> <p>b) A wider mechanism is in place to ensure that disturbance can be limited to an acceptable level.</p> | |
| Mitigation and Management | | | |
| Mitigation and Management | <p>The Site Integrity Plan, in accordance with the In Principle Site Integrity Plan (application document 8.17) provides an appropriate framework to agree mitigation measures for effects on the Southern North Sea cSAC/SCI with Statutory Nature Conservation Bodies (SNCB)s and the MMO prior to construction.</p> <p>The MMMP, in accordance with the draft MMMP (application document 8.13), provides an appropriate framework for securing marine mammal mitigation measures in agreement with and the MMO prior to construction.</p> | <p>Agreed, however Natural England would like to see the applicant commit to a final detailed SIP being produced at least 4 months (preferably 6) prior to commencement of pile driving. And would support this being a condition in the DCO</p> <p>Largely agreed. Natural England would suggest that the outline MMMP should be updated to reflect the changes we have proposed to DML Condition 19 (3) i.e. the during construction noise monitoring condition.</p> <p>More details are also required regarding establishment of Marine Mammal Mitigation Zone (MMMZ).</p> <p>Natural England expects to be further consulted on the development of the MMMP for piling and UXOs prior to construction.</p> | <p>It is agreed by both parties that the Site Integrity Plan provides an appropriate framework to agree mitigation measures for effects on the Southern North Sea cSAC/SCI with SNCBs and the MMO prior to construction.</p> |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|-----------------------------------|---|----------------|
| | | <p>More details are also required regarding establishment of Marine Mammal Mitigation Zone (MMMZ).</p> <p>Natural England expects to be further consulted on the development of the MMMP for piling and UXOs prior to construction.</p> | |

2.5 Offshore Ornithology

34. The project has the potential to impact upon Offshore Ornithology. Chapter 13 of the Norfolk Vanguard ES (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
35. Table 9 provides an overview of meetings and correspondence undertaken with Natural England regarding Offshore Ornithology.
36. Table 10 provides areas of agreement (common ground) and disagreement regarding Offshore Ornithology.
37. Minutes of Evidence Plan meetings can be found in Appendix 9.17 and Appendix 25.8 of the Consultation Report (document reference 5.1 of the Application).

Table 9 Summary of Consultation with Natural England in relation to Offshore Ornithology

| Date | Contact Type | Topic |
|--------------------------------|--|--|
| Pre-Application | | |
| 21 st March 2016 | Meeting | Discussion on the required aerial survey methodology (see Appendix 9.17 of the Consultation Report). |
| 21 st March 2016 | Letter from Natural England | Natural England's review of the ornithological survey strategy. |
| 15 th February 2017 | ETG meeting | Discussion on the draft Offshore Ornithology PEIR Chapter (minutes provided in Appendix 9.17). |
| 14 th March 2017 | Email from Natural England | Natural England feedback on Offshore Ornithology Method Statement. |
| 8 th May 2017 | Email from Natural England | Natural England advice on population modelling methods for assessing impacts of the Vanguard OWF. |
| 22 nd June 2017 | Email from the Applicant | Offshore HRA Screening (Appendix 5.1 of the HRA (document 5.3)) provided for consultation. |
| 7 th September 2017 | Email from the Applicant | Provision of draft offshore ornithology PEIR Chapter 13. |
| 6 th October 2017 | ETG meeting | Discussion of comments on the draft PEIR chapter (minutes provided in Appendix 9.20). |
| 11 th December 2017 | PEIR response | Comments on the PEIR chapter |
| 22 nd February 2018 | Email from the Applicant | Provision of draft Norfolk Vanguard Information to Support Habitats Regulations Assessment (HRA) (document 5.3). |
| 23 rd March 2018 | Letter from Natural England | Feedback on the draft Information to Support HRA report |
| 26 th March 2018 | Offshore Ornithology HRA Conference Call | Project update and comments on HRA for Offshore Ornithology (minutes provided in Appendix 25.8). |

| Date | Contact Type | Topic |
|--------------------------------|--------------------------|---|
| Post-Application | | |
| 31 st August 2018 | Relevant Representation | Natural England's initial feedback on the DCO application. |
| 17 th October 2018 | Email from the Applicant | First draft SOCG provided by the Applicant |
| 18th October 2018 | SoCG Meeting | Discussion regarding the drafting of the SoCG |
| 21 st November 2018 | Email from the Applicant | Second draft SOCG provided by the Applicant |
| 23 rd January 2019 | SoCG Meeting | Discussion of offshore ornithology assessment status and next steps |
| 8 th March 2019 | SoCG Meeting | Discussion of offshore ornithology assessment status and next steps and updating the SoCG |

Table 10 Statement of Common Ground - Offshore ornithology

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|--|---|--|
| Environmental Impact Assessment | | | |
| Existing Environment | Survey data collected for Norfolk Vanguard (and East Anglia FOUR, now NV East) for the characterisation of offshore ornithology are suitable for the assessment. | Agreed. | Agreed. |
| | The methods and techniques used to analyse offshore ornithological data are appropriate for characterising bird distributions and estimating populations. | Agreed. | Agreed. |
| | The method used to determine flight heights is appropriate. | Agreed. | Agreed that generic flight height data (Johnston et al. 2014) will be used due to data reliability concerns raised by aerial surveyor. |
| | The method used to assign unidentified birds to species is appropriate. | Agreed. | Agreed. |
| | The use of migration-free breeding months to define seabird seasons is appropriate. | Agreed with the exceptions below. | Agreed except for gannet and lesser black-backed gull. |
| | | Not agreed for gannet and lesser black-backed gull for EIA and HRA, where Natural England request that the full breeding season should be used. | Not agreed |
| Assessment methodology | | | |
| General | Appropriate legislation, planning policy and guidance relevant to offshore ornithology has been used. | Agreed. | Agreed. |
| | The list of potential impacts on offshore ornithology assessed is appropriate. | Agreed. | Agreed. |
| | The methods for determining impact significance on offshore ornithological receptors is appropriate. | Agreed | Agreed. |
| | The worst case scenario used in the assessment for offshore ornithology is appropriate. | Agreed | Agreed. |
| | Differences between single and two phased approaches to construction are trivial in terms of ornithology impacts. | Agreed | Agreed. |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-----------------------------|--|---|----------------|
| | The characterisation of receptor sensitivity is appropriate | Agreed | Agreed. |
| Construction impact methods | The lists of potential construction impacts and ornithology receptors assessed are appropriate. | Agreed. | Agreed. |
| | The methods used to estimate impacts during construction, including cable laying operations, based on mean density estimates and presenting both Natural England's preferred rates and the Applicant's evidence based rates (for displacement and mortality) are appropriate. | Agreed (for project alone EIA using Natural England's preferred rates. Not currently agreed for cumulative or HRA alone and in-combination) | Agreed |
| Operation impact methods | The sources of operational impact assessed are appropriate | Agreed | Agreed |
| | The lists of ornithology receptors assessed for each impact are appropriate. Species included were those with impacts above minimal thresholds (e.g. >10 collisions per year). | Agreed (for project alone EIA. Not currently agreed for cumulative or HRA alone and in-combination). | Agreed |
| | Methods used to assess operational displacement presented in the ES and subsequent revisions submitted at Deadline 1 (Norfolk Vanguard Offshore Wind Farm Offshore Ornithology: Red-throated diver displacement (Appendix 3.1, document reference ExA; WQApp3.1; 10.D1.3), Norfolk Vanguard Offshore Wind Farm Offshore Ornithology: Operational Auk Displacement: update and clarification (Appendix 3.3, document reference ExA; WQApp3.3; 10.D1.3)) are appropriate, based on the use of mean densities and evidence based percentages of displacement and mortality. | Displacement assessments for the site alone at EIA based on upper and lower confidence intervals for bird density in addition to the mean densities have been supplied in documents submitted at Deadline 1. Agreed on the basis that the assessment includes Natural England's preferred rates. Not currently agreed for cumulative or HRA alone and in-combination. | Agreed |

| | | | |
|--|---|---------------|---------------|
| | <p>Method for assessing seabird collision risk is appropriate: using Band option 2, presenting results for mean seabird density (and 95% c.i.), Natural England advised species specific avoidance rates (+/- 2 SD), BTO flight height estimates (and 95% c.i.) and Natural England advised nocturnal activity rates.</p> | <p>Agreed</p> | <p>Agreed</p> |
|--|---|---------------|---------------|

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|---|--|---|---|
| | Non-seabird migrant collision assessment submitted at Deadline 3 as per Natural England's request (Norfolk Vanguard Offshore Wind Farm Migrant non-seabird Collision Risk Modelling ExA; AS; 10.D3.6_Migrant Non-Seabird Collision Risk Modelling) is appropriate. | Agreed (but seeking clarification and revision for certain inputs, although acknowledge these will not alter conclusions) | Agreed, subject to provision of clarification/revision of some input parameters. However, we note that this will not alter the conclusions. |
| | Methods for assessing barrier effects are appropriate. | Agreed | Agreed |
| | Methods for assessing indirect effects are appropriate. | Agreed | Agreed |
| Impact assessment findings – project alone (EIA) | | | |
| Construction impacts | The magnitude of effects and conclusions on significance resulting from impacts during construction are correctly identified and predicted. No impacts of greater than minor adverse significance are predicted. | Agreed when using Natural England's preferred rates and methods (as presented in the Applicant's Deadline 1 submissions). | Agreed |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------------------|---|---|--|
| Operation impacts | The magnitude of effects and conclusions on significance resulting from displacement impacts during operation are correctly identified and predicted. No impacts of greater than minor adverse significance are predicted. | <p>Agreed, for gannet, razorbill, guillemot and puffin subject to the following caveat: extended breeding season for gannet (although it is agreed that this does not alter the conclusions). No impacts predicted to be greater than minor adverse for these species).</p> <p>Agreed for red-throated diver, using Natural England's preferred rates and methods for Norfolk Vanguard East.</p> <p>Not agreed for red-throated diver, using Natural England's preferred rates and methods for Norfolk Vanguard West and Norfolk Vanguard East and West combined (moderate adverse effect).</p> | Agreed for all species using Natural England's preferred rates except red-throated diver at Norfolk Vanguard West and Norfolk Vanguard East and West combined (moderate adverse effect). |
| | Using the Band collision model, with Natural England's preferred input parameters and model methods, the magnitude of effects and conclusions on significance resulting from collision impacts for seabirds during operation are correctly identified and predicted. No impacts of greater than minor adverse significance are predicted for all species, although for great black-backed gull this conclusion has a degree of uncertainty if the upper confidence density estimate is used for assessment. | Agreed (it should be noted that this agreement has only been reached following discussions between Natural England and the Applicant and agreement to focus the assessment on the deterministic Band model) | Agreed |
| | The magnitude of effects and conclusions on significance resulting from barrier effects during operation are correctly | Agreed | Agreed |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|---|--|---|----------------|
| | identified and predicted. No impacts of greater than minor adverse significance are predicted. | | |
| | The magnitude of effects and conclusions on significance resulting from indirect effects during operation are correctly identified and predicted. No impacts of greater than minor adverse significance are predicted. | Agreed | Agreed |
| Decommissioning impacts | The magnitude of effects and conclusions on significance resulting from impacts during decommissioning are correctly identified and predicted. No impacts of greater than minor significance are predicted. | Agreed that decommissioning impacts are likely to be no worse than those during construction. However, Natural England notes that further consultation will be required (at the time decommissioning is being planned) to ensure potential impacts are minimised. | Agreed |
| Cumulative impact assessment (EIA) | | | |
| Cumulative construction assessment | The plans and projects considered within the CIA are appropriate | Agreed | Agreed |
| | The magnitude of effects and conclusions on significance resulting from cumulative impacts during construction are correctly identified and predicted. No impacts of greater than minor adverse significance are predicted. | Agreed. | Agreed. |
| Cumulative operation assessment | The plans and projects considered within the CIA are appropriate. | Not agreed (additional projects and clarifications on datasets are required). There also remains uncertainty about the magnitude of effects to be assigned to other projects currently in Examination: Natural England has raised concerns about the validity of the displacement assessments for the Hornsea THREE and Thanet extension applications during the ongoing Examination process, and advises that the associated values are unlikely to reflect the impacts of these developments should they be consented. | Not agreed |
| | The magnitude of effects and conclusions on significance resulting from cumulative displacement impacts during operation are correctly identified and predicted and no impacts of greater than minor adverse significance are predicted for the following species: | | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|----------------|
| | Red-throated diver | Not agreed: red-throated diver assessment should make use of generic seabird distribution data for wind farms included in the cumulative assessment for which no density or displacement estimates are available. | Not agreed |
| | Guillemot and razorbill | <p>Conclusions not agreed: Natural England still advises that a range of displacement and mortality rates are considered by the Applicant in reaching its conclusions (i.e. 30-70% displacement and 1-10% mortality) as well as the Applicant's preferred rates, and that Moray West OWF is still not included in the cumulative assessment (as detailed in our response to the Applicant's auk and gannet displacement note, Appendix 3.3; [REP3-051].</p> <p>Also not agreed due to summing errors in the cumulative tables presented for auks and uncertainty about data sources for other projects (e.g. Seagreen, Thanet Extension, Hornsea Project THREE).</p> | Not agreed |
| | Gannet | Not agreed that gannet has not been included in the cumulative displacement assessment. | Not agreed |
| | Using the Band collision model option 2, with Natural England's preferred input parameters (see above) and methods, combined with like for like figures for other projects (as far as possible given the information available), the magnitude of effects and conclusions on significance resulting from cumulative collision impacts for seabirds during operation are correctly identified and predicted. | <p>Not agreed for the following reasons:</p> <p>Missing wind farms (Kincardine, Hywind, Moray West)</p> <p>References to unsupported PBR outputs in assessment</p> <p>References to PVA not produced following current guidance methods (e.g. model outputs for 25 years whereas project lifespan is 30 years).</p> | Not agreed |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|---|---|--|
| Habitats Regulations Assessment (HRA) | | | |
| Screening of LSE | The Approach to HRA Screening is appropriate. | Agreed | Agreed |
| | <p>The following sites and species should be screened in for further assessment:</p> <ul style="list-style-type: none"> Alde-Ore Estuary Special Protection Area (SPA) (lesser black-backed gull); Flamborough and Filey Coast potential Special Protection Area (pSPA) (gannet and kittiwake); Flamborough Head and Bempton Cliffs SPA (kittiwake); and Greater Wash SPA (red-throated diver and little gull). | <p>Agree with list but also advise inclusion of gannet, guillemot and razorbill from Flamborough and Filey Coast SPA for displacement following revision to assessment methods (see above).</p> <p>There may also be a requirement to include non-seabird migrants following further assessment of collision risk (see above).</p> <p>Natural England also considers that Outer Thames Estuary may need to be considered for disturbance to red-throated divers by operation and maintenance vessels. Natural England have agreed to provide best practice guidance on this matter.</p> <p>Natural England also advises that Flamborough Head and Bempton Cliffs SPA is now subsumed into the designated Flamborough and Filey Coast SPA and the former can therefore be removed from the list.</p> <p>Natural England also considers there may be nonbreeding season connectivity for auks with the Farne Islands SPA and Coquet Island SPA.</p> | Agreed (subject to caveats as per Natural England position column) |
| Assessment | The approach to the determination of AEoI is appropriate. | Agreed | Agreed |
| | Conclusion of no AEoI for lesser black-backed gull population at Alde-Ore Estuary is appropriate, on the basis of alone and in-combination collisions | Not agreed due to concerns about the population estimates and SPA apportioning. | Not agreed |
| | | Not agreed due to outstanding issues with the collision methods used. However, following agreement on use of deterministic Band model, update of HRA figures using these methods will be appropriate. | Not agreed |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|---|--|
| | | Not agreed due to PVA methods used (including around use of recommended counterfactuals, 'matched runs' and length of projection) and possible mismatch of adult and all age birds. | Not agreed |
| | Conclusion of no AEol for gannet population at Flamborough and Filey Coast SPA is appropriate on the basis of alone and in-combination collisions and the predicted consequences from PBR and PVA. | Not agreed. Due to the assignment of months to the breeding season and the nonbreeding apportioning rates. | Not agreed |
| | | Not agreed due to outstanding issues with the collision methods used (see above). However, following agreement on use of deterministic Band model, update of HRA figures using these methods will be appropriate. | Not agreed |
| | | Not agreed due to PVA methods used (including around use of recommended counterfactuals, 'matched runs' and length of projection) and possible mismatch of adult and all age birds. | Not agreed |
| | | Not agreed. Natural England considers that project alone and in-combination effects should be assessed for displacement for this SPA feature, and also for combined displacement and collision risk. | Not agreed |
| | | Conclusion of no AEol for kittiwake population at Flamborough and Filey Coast SPA is appropriate on the basis of alone and in-combination collisions and the predicted consequences estimated from PVA. | Not agreed. Due to the method used to apportion breeding season collisions. |
| | | Not agreed due to outstanding issues with the collision methods used (see above). However, following agreement on use of deterministic Band model, update of HRA figures using these methods will be appropriate. | Not agreed |
| | | Not agreed due to PVA methods used (including around use of recommended counterfactuals, 'matched runs' and length of projection) and possible mismatch of adult and all age birds. | Not agreed |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|----------------------------------|--|---|----------------|
| | Conclusion of no AEol for kittiwake population at Flamborough Head and Bempton Cliffs SPA is appropriate on the basis of alone and in-combination collision totals and the predicted consequences estimated from PVA. Note that this feature is the same as that for the Flamborough and Filey Coast SPA and therefore covered by that assessment. | Not agreed. Position as per that for the Flamborough and Filey Coast SPA assessment of this feature (see above). Natural England also advises that this SPA no longer requires to be assessed since it is wholly subsumed within the Flamborough and Filey coast SPA. | Not agreed |
| | Conclusion of no AEol for the red-throated diver population at the Greater Wash SPA is appropriate on the basis of project alone and in-combination construction displacement. | Not agreed. Natural England advises use of higher displacement and mortality rates for displaced birds and inclusion of additional sources of disturbance (e.g. cable laying for Hornsea THREE and from other operational/consented OWFs located within the SPA) in the in-combination assessment. | Not agreed |
| | Conclusion of no AEol for the red-throated diver population at the Greater Wash SPA and Outer Thames Estuary SPA is appropriate on the basis of project alone and in-combination operation displacement. | Natural England advises that adoption of best practice vessel operation measures whilst traversing the SPA will remove risk of an Adverse Effect on Integrity. Natural England will provide this guidance to the Applicant for review. | Not agreed |
| | Conclusion of no AEol for the little gull population at the Greater Wash SPA is appropriate on basis of project alone and in-combination collisions. | Not agreed. Natural England accepts methods for apportioning little gull collision to the SPA population, but have outstanding questions regarding the collision methods (see above). | Not agreed |
| Mitigation and Management | | | |
| Mitigation and Management | Given the impacts of the project, the proposed mitigation and monitoring (to be developed through the Ornithological Monitoring Plan, in accordance with the In Principle Monitoring Plan (Application document 8.17)) is adequate. | Not agreed. Natural England would like to undertake further discussions with the Applicant to explore mitigation options. | Not agreed |

2.6 Onshore Ecology and Ornithology

38. The project has the potential to impact upon Onshore Ecology and Ornithology. Chapters 22 (Onshore Ecology) and 23 (Onshore Ornithology) of the Norfolk Vanguard ES (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
39. Table 11 provides an overview of meetings and correspondence undertaken with Natural England regarding Onshore Ecology and Ornithology.
40. Table 12 provides areas of agreement (common ground) and disagreement regarding Onshore Ecology and Ornithology.
41. Minutes of Evidence Plan meetings can be found in Appendix 9.19 and Appendix 25.1 of the Consultation Report (document reference 5.1 of the Application).

Table 11 Summary of Consultation with Natural England in relation to onshore ornithology

| Date | Contact Type | Topic |
|---------------------------------|--------------|--|
| Pre-Application | | |
| 8 th August 2016 | Email | Draft Onshore Winter/Passage Bird Survey Scoping Report provided (Appendix 23.1 of the ES). |
| 15 th September 2016 | Email | Comments on draft survey specification for wintering/autumn and spring passage bird survey. |
| 18 th November 2016 | Email | Provision of the amended Onshore Winter/Passage Bird Survey Scoping Report following comments on the survey specification (provided in Appendix 23.1 of the ES). |
| 14 th January 2017 | Email | Provision of the Onshore Ecology and Ornithology Method Statement (provided in Appendix 9.3). |
| 24 th January 2017 | Meeting | Introduction to the project, approach to ecological surveys, discussion on the method statement. |
| 13 th March 2017 | Email | Comments on onshore wintering bird survey methodology |
| 3 rd April 2017 | Email | Agreement on Phase 2 survey methodologies. |
| 18 th July 2017 | Meeting | Discussion on interim survey results, project update, initial findings of assessment and approach to mitigation. |
| 11 th December 2017 | Email | Feedback on the PEIR from Natural England. |

| Date | Contact Type | Topic |
|--------------------------------|---|---|
| 22 nd January 2018 | Meeting | Discussion on PEIR feedback, survey results and updates to the project. |
| 5 th February 2018 | Email | Provision of advice from Natural England regarding great crested newt mitigation alternatives. |
| 6 th February 2018 | Email | Review of Onshore Ecology and Ornithology baseline reports. |
| 9 th February 2018 | Email | Provision of the Norfolk Vanguard Bat Activity Survey Report (Appendix 22.4 of the ES (document 6.2). |
| 19 th February 2018 | Meeting | Discussion on the baseline report from the onshore ornithological surveys. |
| 22 nd February 2018 | Email | Provision of draft Norfolk Vanguard Information to Support Habitats Regulations Assessment (HRA) (document 5.3). |
| 6 th March 2018 | Email | Natural England comments on bat activity survey report. |
| 12 th March 2018 | Meeting | Discussion on the outcomes from the assessment and the approach to great crested newt mitigation (minutes provided in Appendix 25.1). |
| 23 rd March 2018 | Email and PDF | Clarifications following HRA meeting 22 nd February 2018 sent to Natural England. |
| 23 rd April 2018 | Great Crested Newt – Draft Licence Meeting | Discussion on the draft great crested newt mitigation licence (minutes provided in Appendix 25.1). |
| 23 rd April 2018 | Onshore Habitats Regulations Assessment Meeting | Discussion of Natural England comments on the onshore ecology section of the HRA Report (minutes provided in Appendix 25.1). |
| Post-Application | | |
| 31 st August 2018 | Relevant Representation | Natural England's initial feedback on the DCO application. |
| 17 th October 2018 | Email from the Applicant | First draft SOCG provided by the Applicant |
| 18 th October 2018 | SoCG Meeting | Discussion regarding the drafting of the SoCG |
| 21 st November 2018 | Email from the Applicant | Second draft SOCG provided by the Applicant |
| 30 th November 2018 | Email from the Applicant | Clarification notes (Appendices 1-3 of the SOCG) provided by the Applicant |
| 21 st January 2019 | SoCG Meeting | |

| Date | Contact Type | Topic |
|--------------------------------|--------------|---|
| 27 th February 2019 | SoCG Meeting | Ongoing discussions regarding onshore ecology assessment and clarification notes – SoCG to be updated following the Issue Specific Hearing on 27th March 2019 |

Table 12 Statement of Common Ground - Onshore ecology and ornithology

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|--|---|---|--|
| Environmental Impact Assessment | | | |
| Survey methodology | Survey methodologies for Phase 1 Habitat Surveys are appropriate and sufficient, and were agreed during the Expert Topic Group meeting held in January 2017. Phase 1 habitat surveys were undertaken in February 2017. Whilst the Applicant acknowledges that the optimum period for Phase 1 Habitat Survey is between March and September the findings of the Phase 1 survey are considered appropriate to characterise the habitats present within the study area. | Survey data was only collected for 50% of onshore cable route where access was available and in a suboptimum period. Any future surveys should aim for better coverage and be completed within the appropriate survey season. | |
| | Survey methodologies for Phase 2 Surveys are appropriate and sufficient, and were discussed during the Expert Topic Group meeting held in January 2017 and agreed via email on 3 rd April 2017. | Agreed | Both parties agree that Phase 2 survey scopes are appropriate. |
| Existing Environment | Survey data collected for Norfolk Vanguard for the characterisation of onshore ecology and ornithology are suitable for the assessment. | Not agreed, refer to specific issues identified later within this SoCG | |
| | The ES adequately characterises the baseline environment in terms of onshore ecology and ornithology. | Not agreed, refer to specific issues identified later within this SoCG | |
| Assessment methodology | Appropriate legislation, planning policy and guidance relevant to ecology and ornithology has been considered for the project (listed in section 22.2 and 23.2 in Chapter 22 Onshore Ecology and Chapter 23 Onshore Ornithology respectively). | Not agreed, refer to specific issues identified later within this SoCG | |
| | The list of potential impacts on onshore ecology and ornithology assessed is appropriate, based on feedback at Section 42 consultation. | Not agreed, refer to specific issues identified later within this SoCG | |
| | The impact assessment methodologies used for the EIA provide an appropriate approach to assessing potential impacts of the project. This was discussed and agreed during the Expert Topic Group meetings in January and September 2017. | Agreed | It is agreed by both parties that the impact assessment |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|----------------------------|---|--|---|
| | <p>The worst case scenario presented in the ES, is appropriate for the project.</p> | <p>Agreed</p> | <p>methodologies used in the EIA are appropriate.</p> <p>It is agreed by both parties that the worst case scenario presented in the ES, is appropriate for the project.</p> |
| <p>Assessment findings</p> | <p>Dereham Rush Meadow Site of Special Scientific Interest (SSSI), Holly Farm Meadow SSSI, Whitwell Common SSSI and Booton Common SSSI, whilst predominantly surface water fed are also partly groundwater fed – from the underlying chalk aquifer (based on WETMECS data). Clarification of the water supply to these designated sites and the potential for interaction with the Norfolk Vanguard project is provided within Appendix 2 of this document.</p> <p>The onshore duct installation works comprise open cut trenching (to 1.5m) and trenchless crossings to bury cable ducts (down to typically 6-8m below ground level). There is no direct pathway between the construction works and the underlying chalk aquifer, and detailed groundwater assessment is not deemed necessary.</p> <p>In terms of surface water flows, Dereham Rush Meadow SSSI and Holly Farm Meadow SSSI are upstream of the works and would not be affected by surface water quality effects associated with the construction works. Booton Common SSSI is considered in detail within the HRA Report at Section 9.3.3.2, which concludes no AEoI. Whitwell Common SSSI is fed by Booton Common SSSI and the findings for Booton Common SSSI would be equally applicable to Whitwell Common SSSI.</p> | <p>,</p> <p>Natural England suggest the following nationally designated wetland sites should be screened in for further consideration of impacts on groundwater supply and surface water quality:</p> <ul style="list-style-type: none"> • Dereham Rush Meadow SSSI (0.4km away); • Holly Farm Meadow, Wendling SSSI (0.9km away); • Whitwell Common SSSI (1.2 km away); • Booton Common SSSI (0.6km away). • <p>Further information should be obtained from Environment Agency and used in a detailed appraisal of groundwater effects, e.g. WETMEC data showing the water supply mechanism for all the component sites and/or EA's groundwater modelling of</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|----------------|
| | <p>In addition, the Applicant has committed to develop a scheme and programme for each watercourse crossing, diversion and reinstatement which will include site specific details of the sediment management measures and pollution prevention. This scheme will be submitted to and, approved by the relevant planning authority in consultation with Natural England. This is secured through Requirement 25 of the draft DCO.</p> <p>With these commitments in place there will be sufficient control measures to safeguard designated sites in relation to sediment control, pollution prevention and reinstatement of all work areas at watercourse crossings.</p> | <p>the area. If the installation of the cable route would affect the groundwater supply to these sites, then a detailed assessment should be undertaken and mitigation measures implemented to minimise any identified effects.</p> <p>The qualifying features of the Norfolk Valley Fens SAC present at Booton Common are water-sensitive habitats reliant on the groundwater supply and not surface water from the Blackwater Drain to maintain their structure and function as stated. Measures to safeguard water quality should be employed at watercourse crossings (see our comments in relation to River Wensum). Natural England advise further detail is required to minimise the risk of pollutant and fine sediment release from the works at the trenchless crossing zone at the Wendling Beck during construction.</p> | |
| | <p>Groundwater The potential for the construction works to affect groundwater supply to nearby designated sites is presented within Appendix 2 of this document. This specifically considers:</p> <ul style="list-style-type: none"> • Dereham Rush Meadow SSSI (0.4km away); • Holly Farm Meadow, Wendling SSSI (0.9km away); • Whitwell Common SSSI (1.2 km away); • Booton Common SSSI (0.6km away). | <p>Natural England require further information to assess the functional connections and the effects from potential changes to groundwater supply to Badley Moor SSSI, Buxton Heath SSSI, Southrepps Common SSSI, Potter & Scarning Fens, East Dereham SSSI. We are not able to agree at this stage that these four sites are not</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|---|--|
| | <p>The exercise presented in Appendix 2 demonstrates that there is no direct pathway between the construction works and the underlying chalk aquifer. The findings are equally applicable to other groundwater sites located further from the construction footprint, i.e.:</p> <ul style="list-style-type: none"> • Bradley Moor SSSI (3.8km away) • Buxton Heath SSSI (4km away) • Southrepps Common SSSI (3.5km away); • Potter & Scarning Fens, East Dereham SSSI (3.2km away); <p>On this basis detailed groundwater assessment is not deemed necessary.</p> | <p>subject to any effects arising from the construction phase of the project.</p> | |
| | <p>The landfall area is underlain by sandy clay and sand to a depth of approximately 18m below ground level – refer to Chapter 19 Ground Conditions and Contamination, section 19.6.1.1. Horizontal Directional Drilling (HDD) through this loose material would generate limited vibration effects; in addition, the loose material itself is a poor propagator of vibration effects. Vibration is best propagated through hard surfaces and the looser the material the more any potential vibration effect becomes dampened.</p> <p>As such there is no propagation pathway for vibration effects between the works (either 130m away or up to 20m below) and known sand martin nesting sites.</p> | <p>Not agreed, sand martin are known to nest in Happisburgh Cliffs. Works are located 130m from nesting sites and drill may pass 10-20m beneath nest sites. An assessment of potential vibration effects and the significance of this for birds should be evaluated.</p> <p>It would be preferable to avoid the breeding season during construction.</p> <p>We agree that lighting should follow good practice guidance for wildlife.</p> | |
| | <p>Ancient Woodland and trees Trenchless crossing techniques are proposed to be used at any location where mixed lowland deciduous woodland is present and which cannot be avoided, and no works will take place within 15m of any woodland. A pre-construction survey will be undertaken by an appropriately experienced arboriculturalist which will inform site-specific measures to protect trees adjacent to the works.</p> | <p>Agreed. We agree with a 15m buffer between the project area and ancient woodland and trees.</p> <p>We note that trenchless crossing techniques (e.g. HDD) are proposed to be used at any location where mixed</p> | <p>It is agreed by both parties that the measures proposed will protect trees and ancient woodland during the works.</p> |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
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| | <p>Measures to protect trees are captured within the Outline Landscape and Environmental Management Strategy (OLEMS) and secured through Requirement 24 Ecological Management Plan, which will require consultation with Natural England prior to discharge.</p> | <p>lowland deciduous woodland is present and which cannot be avoided, and no works will take place within 15m of any woodland. In the area of cable route immediately east of the onshore project substation, if the northern route option is selected trenchless techniques will not be possible for one area of woodland and cable trenching activities will lead to a loss of approximately 0.15ha of semi-natural broadleaved woodland at this location.</p> <p>We support the engagement of an appropriately experienced arboriculturalist.</p> | |
| | <p>Badgers The procedure outlined within the OLEMS for badger main setts within the project area which require to be closed and destroyed will include other types of setts which may be found within (previously un-surveyed) areas of the project area. This will be captured within the Ecological Management Plan, secured through DCO Requirement 24, which will require consultation with Natural England prior to discharge.</p> | <p>Agreed on the basis that this captured within the final EMP allowing sufficient controls to be put in place</p> <p>We advise that the procedure outlined for badger main setts within the project area which require to be closed and destroyed (para 408) should include other types of setts which may be found within (previously un-surveyed) areas of the project area.</p> | <p>Both parties agree that the measures for main sett closure (and applied to other setts) are appropriate.</p> |
| | <p>Wintering and breeding birds To account for potential noise disturbance a buffer of 300m from designated sites (where birds are qualifying features) was identified and potential noise impacts considered. This was agreed with</p> | <p>We agree that there will be a temporary, long term loss of habitats along the cable route which support wintering and breeding birds. Whilst</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|----------------|
| | <p>Natural England in January 2017 (Onshore Wintering Bird Surveys Survey Methodology Approach Update). Beyond this no additional requirement was identified to assess potential disturbance effects.</p> <p>On this basis the assessment of impacts for construction, operation and decommissioning presented are consistent with the agreed assessment methodologies.</p> | <p>arable land can be re-instated fairly quickly, hedgerow habitat will take up to 7 years to re-establish. In addition to direct habitat loss, there is the potential to disturb birds during construction from noise and human presence. Again, no detailed noise assessment appears to have been carried out.</p> <p>We are pleased to note that an Ecological Clerk of Works will be present on site during construction (OLEMS para 229) and suggest that nesting birds should be added to protected species in para 230 as requiring works to stop immediately if found during construction.</p> <p>We agree that the loss of arable breeding habitat is of sufficient duration to be classified as an effect of medium magnitude.</p> <p>Natural England do not currently agree with the residual impact for birds. The applicant has not conducted a noise survey and mitigation outlined as part of the design has not been successfully incorporated or detailed in the CoCP or OLEMS. Further measures should be included in OLEMS to deal with the risk of damaging or destroying ground</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|--|--|----------------|
| | <p>Air Quality Potential air quality impacts have been assessed for designated sites within 200m of the road transport network that will be required during construction. This is presented in Chapter 26 Air Quality, section 26.7.5.2.2. Felbrigg Wood SSSI was identified as a designated site with the potential for air quality impacts due to its proximity to the nearest road network (A148 between King’s Lynn and Cromer). A transect was walked through the designated site, at 50m intervals set back from the road up to 200m. Air quality measurements were taken and included within an air quality model. The results of this are presented in Table 26.31 of Chapter 26. This shows that there will be a short-term 2% increase in critical nitrogen load within 50m of the A148, reducing to 1% at 100m from the A148 and 0% beyond that. This has been assessed as to be an impact of negligible significance.</p> | <p>nesting birds (i.e. skylarks) during construction.</p> <p>Under discussion - checking additional text added by applicant.</p> <p>The report has identified possible air quality effects from increased road traffic on Felbrigg Wood SSSI which is designated for lichens along with its invertebrate assemblage and beech woodland community. We advise that further information is required on woodland species within 200m of the road that will be affected and on the timings, number of vehicles and how polluting the vehicles are likely to be etc. If there is likely to be an effect on a designated feature, the OLEMS should include mitigation measures to reduce changes in air quality, e.g. using efficient vehicles, reducing number of vehicles/time on the road, timing of construction to support biodiversity, possible use of barriers etc.</p> | |
| | <p>Land Use/Soils The onshore cable duct installation strategy will be conducted in a sectionalised approach in order to minimise impacts. Construction teams would work on a short length (approximately 150m section) with topsoil stored adjacent to the excavated trench. Once the cable ducts have been installed, the section would be back filled and the top soil replaced before moving onto the next section. This</p> | <p>Not agreed. This isn’t appropriate and topsoil should be reinstated where it originated. There are significant differences between topsoil in arable and grassland, valley bottom and valley sides and natural, semi natural and managed land. This will need</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
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| | <p>would minimise the amount of land being worked on at any one time and would also minimise the duration of works on any given section of the route. This embedded mitigation is specified through the ES and secured through the Outline Code of Construction Practise (OCoCP) (section 2.5.1). Within each 150m section topsoil from agricultural land may be treated as a single resource for stockpiling and reuse.</p> <p>The Natural England dataset over this part of Norfolk is no longer broken down into Agricultural Land Classification (ALC) Grades 3a and 3b soils. Norfolk Vanguard has calculated the total extent of land that will be permanently lost within Chapter 21 Land use and Agriculture - 7.5ha for the onshore project substation and 3ha for the National Grid extension works. As a worst-case this is assumed to be best and most versatile (BMV) land.</p> <p>Mitigation measures identified for soil management are captured within the OCoCP. A Soil Management Plan (SMP) will be developed and approved prior to commencing each stage of the works. The SMP will form part of the final approved Code of Construction Practise (CoCP) for each stage of the works and is secured through Requirement 20.</p> | <p>clearly addressing in the SMP mentioned in Para 154.</p> <p>We are also pleased to see that the project will take account of any agri-environment schemes and their land management objectives by negotiation with individual agreement holders.</p> <p>It should be noted that Grade 3 ALC soils need to be split into Grade 3a and Grade 3b, so that the assessment of loss of BMV land can be properly made (Table 21.10). The amount of BMV land that would be permanently lost to the development, i.e. by buildings etc., and the time it would take for the recovery of soils that are disturbed by the construction should be quantified in the ES.</p> <p>We agree that mitigation measures would be set out in a SMP, including construction method statements for soil handling, which would be produced by a competent soil science contractor and agreed with the relevant regulator in advance of the works. This would be completed pre-construction once an earthworks contractor has been appointed and detailed earthworks phasing information is available. The</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|-----------------------------------|---|----------------|
| | | <p>contractor would be required to comply with the SMP.</p> <p>We note that the total permanent land take for the footprint of the onshore project substation and National Grid substation extension zone is approximately 10.5ha according to the worst case scenario (Table 21.16). These will be on ALC grades 2 and 3 land; the amount of BMV land should be estimated.</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|----------------|
| | <p>Land Use/ Agri environment</p> <p>Within the study area there are Entry Level Stewardship Schemes (ESS) with Higher Level components, but no Higher Level Stewardship Schemes. A commitment will be made within the private agreements between Norfolk Vanguard Limited and the landowner/occupier to compensate for losses incurred due to potential impacts on ESS during the construction phase of the project.</p> | <p>Not agreed., There are both Higher Level Stewardship and Higher Tier Countryside Stewardship agreements along the cable route. Due consideration will need to be given to ensure the delivery of these schemes will not be hindered or compromised.</p> <p>We note that during the construction period there would be the potential for impacts on agri-environment schemes within the onshore project area which will be specific to individual landowners / occupiers. We agree that this would need to be discussed between Norfolk Vanguard Limited, landowners, occupiers and Natural England prior to construction.</p> <p>We note that the onshore cable route crosses Entry Level (34.13ha, 6.4% of onshore project area) and Entry Level plus Higher Level (117.8ha, 22.2% of onshore project area) Stewardship Scheme agreements.</p> | |
| | <p>The assessment of cumulative impacts is consistent with the agreed methodologies.</p> | <p>Not agreed. The in-combination assessment should include Hornsea 3 as the cable route for this offshore wind farm passes within 1km of</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|----------------------------------|---|--|----------------|
| | | Booton Common SSSI and construction periods may overlap. | |
| Mitigation and Management | | | |
| Approach to mitigation | <p>All mitigation measures required are outlined in the Outline Code of Construction Practice and OLEMS.</p> <p>River Wensum SAC Sediment management measures to mitigate potential water quality impacts during construction are presented within the Information to Support HRA Report (document 5.3) at paragraph 1166. These measures will be included in an updated OCoCP that will be submitted during the examination. The measures identified represent the principles by which mitigation measures will be delivered.</p> <p>The Applicant has committed to develop a detailed scheme and programme for each watercourse crossing, diversion and reinstatement, which will include site specific details regarding sediment management and pollution prevention measures. This scheme will be submitted to and, approved by the relevant planning authority in consultation with Natural England. This commitment is secured through Requirement 25 (Watercourse Crossings) of the draft DCO.</p> <p>With these commitments in place there will be sufficient control measures to safeguard designated sites in relation to sediment control, pollution prevention and reinstatement of all work areas at watercourse crossings.</p> <p>Wintering and breeding birds in wider countryside Mitigation measures for wintering and breeding birds are set out in the OLEMS, paragraphs 224 and 225. This includes measures to minimise effects on ground nesting birds such as, no winter works</p> | <p>Not agreed, see points below</p> <p>Not agreed. 9.3.1.2.2 Para 1167. None of the points regarding sediment management and decommissioning of sediment traps post construction highlighted in Para 1166 are detailed in the current CoCP and we need more detail around these mitigation measures to assess effects on River Wensum SAC.</p> <p>This applies to the conclusions for Desmoulins whorl snail in 9.3.1.3.2/3</p> <p>Wintering and breeding birds in wider countryside: We generally agree with the mitigation measures suggested in</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
|-------|---|--|----------------|
| | <p>undertaken in consecutive years, keep winter crop stubble low during breeding bird season and set aside ground nesting areas beyond 50m of the cable route prior to works.</p> <p>If any protected species are unexpectedly found (all bird species are protected) then works will cease immediately. This is specified at paragraph 230 of the OLEMS.</p> | <p>Outline Landscape and Ecological Management Strategy (para 224/225.)</p> <p>Measures should be included in OLEMS to deal with the risk of damaging or destroying ground nesting birds (i.e. skylarks) during construction.</p> <p>Nesting birds should be included with measures to safeguard protected species if they are unexpectedly found, i.e. work to cease immediately.</p> | |
| | <p>Soil</p> <p>Mitigation measures identified for soil management and reinstatement are captured within the OCoCP. A SMP will be developed and approved prior to commencing each stage of the works which will specify the site specific methods that will be employed. The SMP will form part of the final approved CoCP for each stage of the works and is secured through Requirement 20.</p> | <p>Not agreed. Details of actual methods employed are needed in relation to sediment control, and reinstatement of all work areas and in-principle approach would help agreement.</p> | |
| | <p>Semi natural habitats</p> <p>Semi-natural grassland habitats that may subject to topsoil strip are limited to 0.2ha scattered scrub, 8.1ha marshy grassland and 0.1ha tall ruderal. Out of a total project footprint of 270ha. Buffer strips will be retained adjacent to watercourses where possible. Where surface vegetation has been removed, it will be reseeded to prevent future runoff (excluding arable crops).</p> | <p>Not agreed. Reseeding may not be appropriate in semi-natural habitats or land with permanent vegetative cover, where deep turf stripping and reinstatement may be more appropriate. Reseeding will only be effective when carried out in suitable growing conditions, otherwise it risks</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
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| | | extended periods of bare ground, liable to erosion. | |
| | The use of trenchless crossing techniques at County Wildlife Sites is acceptable subject to detailed design. This was discussed and agreed (in principle) during the Expert Topic Group meeting in January 2018. | Agreed | It is agreed by both parties that the use of trenchless crossings at CWS are acceptable, subject to detailed design. |
| | The provision of an Ecological Management Plan (based on the OLEMS submitted with the DCO application, document reference 8.7) is considered suitable to ensure potential impacts identified in the Ecological Impact Assessment are appropriately minimised. | Yet to be discussed | |
| | The mitigation proposed for great crested newts is appropriate and proportionate (as outlined in the draft great crested newt mitigation licence, circulated and discussed at April 2018 meeting). | Agreed, Natural England are satisfied that the great crested newt plans reflect our advice given earlier in the year. The report identifies where licences may be required for bats and water voles. | |
| HRA | | | |
| Screening of LSE | The methodology and sites screened in for the HRA as presented in Appendix 5.2 of the Information to Support HRA report (Application document 5.3) are considered appropriate, considering sites within 5km of onshore infrastructure. This was agreed during the Expert Topic Group meeting in July 2017. | Further consideration should be given to Broadland and Breydon SPA in relation to non seabird migrants | |
| | The approach to HRA screening is appropriate. The following sites were screened in for further assessment: <ul style="list-style-type: none"> • River Wensum; • Paston Great Barn; and • Norfolk Valley Fens. This was agreed during the Expert Topic Group meeting in July 2017. | The Broads SAC should also have been screened for assessment | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
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| | <p>Broadland SPA/Ramsar</p> <p>Wintering/passage bird surveys were undertaken for the full survey period, October – March, was collected for the following habitats:</p> <ul style="list-style-type: none"> • Agricultural land within 5km of the Broadland SPA and Ramsar site, and also within – or within a precautionary 1km disturbance buffer of – the onshore infrastructure; • Coastal habitats within 5km of the Broadland SPA and Ramsar site, and also within – or within a precautionary 1km disturbance buffer of – the onshore infrastructure; and • Lowland fen, rivers and lakes and lowland heathland habitats of the Hundred Stream within 5km of the Broadland SPA and Ramsar site, and also within – or within a precautionary 1km disturbance buffer of – the onshore infrastructure <p>The results of these surveys demonstrated low levels of wintering birds and the site was screened out for further consideration within the HRA report.</p> | <p>Not agreed</p> <p>Broadland SPA/Ramsar site: This site was scoped out of the HRA on the basis that there was evidence of low levels of wintering birds associated with the SPA/Ramsar using the study area. However, this may have been due to the cropping regime at the time of survey. We requested that this point was taken account of by including additional measures, e.g. survey and/or WeBS data and information about predicted crop patterns at the time of the proposed work. We suggest that the Outline Landscape and Ecological Management Strategy (OLEMS) is amended to include further survey and provide suitable mitigation measures if required.</p> | |
| <p>Information to support HRA</p> | <p>River Wensum SAC</p> <p>Cable trench arrangement</p> <p>The cable trench arrangement is described within Chapter 5 of the ES Project Description. Plate 5.16 shows the trench arrangement and the extent of stabilised backfill (cement bound sand). The cement bound sand will represent a stabilised layer within which the cable ducts are secured. There will be approximately 10cm of cement bound sand above and below the cable ducts. Above the cement bound sand will be approximately 1m of subsoil and topsoil.</p> | <p>River Wensum SAC</p> <p>From information provided, we are not able to agree with the conclusion that there is no potential adverse effect on the integrity of the River Wensum SAC in relation to the conservation objectives for the site.</p> | |

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| | <p>The cement bound sand will represent an impermeable barrier. A detailed assessment of potential changes to subsurface flows is presented in Chapter 20 Water Resources and Flood Risk at section 20.7.6.1.1. As a result of the limited spatial extent of permanent impermeable development along the cable route, the effect is considered to be of negligible magnitude.</p> <p>Drainage A Surface Water and Drainage Plan (Requirement 20 (2)(i)) 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. This typically includes interceptor drainage ditches being temporarily installed parallel to the trenches and soil storage areas to provide interception of surface water runoff and the use of pumps to remove water from the trenches during cable installation. Drainage would remain in place for the duration of the construction period.</p> | <p>5.5.2.3.1 Para 314. The cement bound sand would need the same hydrological properties as the native subsoil to avoid long term disruption to hydrological regime</p> <p>5.5.2.4 Para 317. Drainage/water management needs to be maintained for the whole construction period, for as long as any un-reinstated ground remains, including the cable pulling phase where the running track will still be in place.</p> | |
| Assessment of Adverse Effect on Integrity | The approach to undertaking the assessment is appropriate | Not agreed | It is agreed by both parties that the approach to the HRA is appropriate. |
| | <p>Booton Common SSSI (part of Norfolk Valley Fens SAC), is located 0.6km from the onshore cable route. Broad Fen, Dilham component SSSI (part of The Broads SAC) is located 3.6km from the onshore cable route.</p> <p>These sites, whilst predominantly surface water fed are also partly groundwater fed – from the underlying chalk aquifer (based on WETMECS data). Clarification of the water supply to these designated sites and the potential for interaction with the Norfolk Vanguard project is provided within Appendix 2 of this document.</p> | <p>From the information provided with the application, Natural England consider that there is insufficient evidence provided to assess any impacts which may arise from changes in groundwater flow to component SSSIs of Norfolk Valley Fens SAC.</p> <p>Natural England note that there is no information provided on the water</p> | |

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| | <p>There is no direct pathway between the works and the underlying chalk aquifer that these sites are dependent upon, and detailed groundwater assessment is not deemed necessary.</p> <p>The conclusions of no adverse effect on site integrity in the Information to Support HRA report (document 5.3) for these two sites are appropriate.</p> <p>With reference to the two HDD crossings near to Blackwater Drain – this is in fact a single HDD crossing with individual compounds depicted at each end of the crossing, for entry and exit of the HDD. This trenchless crossing is needed for crossing the proposed Hornsea Project Three cables for technical requirements. Impacts at watercourse crossings are predominantly related to the introduction of temporary culverts to provide access either side of the watercourse. Whether the crossing technique is trenched or trenchless, a temporary culvert will be required for access either side of the Blackwater Drain. However, each crossing (whether trenched or trenchless) is not considered to result in a significant effect when assessed individually. Impacts resulting from the use of temporary culverts would be reversible once the structures have been removed and the area reinstated. The natural hydrology would recover immediately upon structure removal, and geomorphology and associated physical habitats are also expected to recover rapidly. The use of these techniques is therefore not considered to result in significant adverse effects.</p> <p>The design of all watercourse crossing will be submitted to and approved by the relevant planning authority in consultation with</p> | <p>supply mechanism for The Broads / Norfolk Valley Fens SACs and how this may be affected by the installation of the cable route. Natural England advise that further information is obtained from Environment Agency and used in a detailed appraisal of groundwater effects, e.g. WETMECS data showing the water supply mechanism for all the component sites and/or EA’s groundwater modelling.</p> <p>There appears to be 2 HDDs very close to Blackwater Drain tributary crossings (Figure 9.6), and we are unsure as to why HDD cannot be undertaken for the watercourses which feed into Blackwater Drain rather than the trenched crossings which are proposed.</p> <p>Not agreed, Table 9.13 identifies surface water catchments and whether the project area is upstream or downstream of the SSSI. All component sites except Booton Common SSSI have been screened out from further investigation. However, we are not able to agree with this conclusion as all sites are dependent on groundwater supply. We advise that further information is obtained from Environment Agency and used in a detailed appraisal of groundwater</p> | |

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| | <p>Natural England, prior to the commencement of each stage of the onshore transmission works. This is secured through Requirement 25 of the draft DCO.</p> | <p>effects, e.g. WETMECS data showing the water supply mechanism for all the component sites and/or EA's groundwater modelling. If the installation of the cable route would affect the groundwater supply to these sites, then a detailed assessment should be undertaken and mitigation measures implemented to minimise any identified effects.</p> <p>An 'in combination' assessment with Hornsea 3 OWF should also be undertaken as this cable route passes about 360m to east of Booton Common and construction periods may overlap.</p> <p>In addition, information should be provided on the design and longevity of any temporary culverts.</p> | |
| | <p>Sediment management and water quality measures have been identified and are described in Section 11.1 of the outline CoCP; Requirement 20 of the draft DCO sets out that no stage of the onshore transmission works may commence until for that stage a final CoCP has been submitted to and approved by the relevant local planning authority. This would provide site specific details for sediment management informed by the detailed design and appointment of the Principal Contractor.</p> | <p>Not agreed, further site specific information is required regarding the River Wensum SAC (RR4.5.1).</p> <p>There is insufficient detail in the CoCP for measures to safeguard the designated sites in relation to sediment control and reinstatement of all work areas. In addition, detailed management and monitoring</p> | |

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| | <p>In addition, the Applicant will develop a scheme and programme for each watercourse crossing, diversion and reinstatement which will include site specific details of the sediment management measures including their use and removal. This scheme will be submitted to and, approved by the relevant planning authority in consultation with Natural England. This is secured through Requirement 25 of the draft DCO.</p> <p>Both the final CoCP and watercourse specific crossing schemes will also include site specific details of management and monitoring procedures in case of bentonite breakout at trenchless crossings.</p> <p>With these commitments in place there will be sufficient control measures to safeguard designated sites in relation to sediment control, pollution prevention and reinstatement of all work areas at watercourse crossings.</p> | <p>procedures should be provided in the CoCP in case of 'breakout'</p> <p>Not agreed, Works to facilitate the trenchless crossing of the River Wensum may take place within the River Wensum floodplain north of Penny Spot Beck, which we advise should be avoided as it is part of a Countryside Stewardship agreement to improve the site integrity of the River Wensum SAC.</p> <p>Natural England note that there is insufficient detail in the CoCP for measures to safeguard the designated site in relation to sediment control, pollution prevention, and reinstatement of all work areas. In addition, detailed management and monitoring procedures should be provided in the CoCP in case of 'breakout' (where the drilling fluid leaves the bore and escapes into the surrounding substrate). [This comment also relates to Norfolk Valley Fens SAC and The Broads SAC and SSSI sites downstream]. Information from the EIA on dependency on groundwater, a Clarification Note should draw out additional information for inclusion in HRA.</p> | |

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| | <p>All hedgerows within 5km of Paston Great Barn SAC that will be temporarily removed during construction (130m) were identified. 82m of these hedgerows have been confirmed as supporting foraging Barbastelle bats (based on bat activity surveys undertaken by the Applicant) and are accordingly classified as important hedgerows for foraging Barbastelle bats. On this basis, the 82m of hedgerows are all considered to be important Barbastelle features and the assessment has been undertaken on this basis. Clarification of the process that was undertaken by the Applicant is provided within Appendix 3 of this document.</p> <p>Paragraph 1185 of the Information to Support HRA Report (document 5.3) provides details of the anticipated hedgerow recovery for the affected 82m of hedgerow (3-7 years) – recovery meaning to “mature up to a standard whereby the hedgerow is providing value for commuting and foraging barbastelle bats”. All hedgerows temporarily removed will be replaced in their original locations, i.e. replacement hedgerows will be planted above the buried cables.</p> <p>Details of hedgerow mitigation are provided at Paragraph 1186 of the Information to Support HRA Report which includes a commitment for hedges to become overgrown either side of the section to be removed prior to construction. All bat and hedgerow mitigation measures are also captured within the OLEMS and secured through Requirement 24 of the draft DCO (Ecological Management Plan), which will require consultation with Natural England prior to discharge.</p> <p>On this basis, the approach to determining the value of hedgerows for Barbastelle bats and the approach to mitigation, is appropriate and sufficient.</p> | <p>Natural England acknowledge the provision of a clarification note, however, will be unable to review this document until after Deadline 1 and therefore this remains not agreed.</p> <p>From the information provided with the application, Natural England consider that there is likely to be an impact on the SAC due to loss and severance of foraging and commuting habitat over at least 7 years. However, we are unable to assess the significance of the impact without further information on habitat to be lost and fragmented as a result of the proposed development.</p> <p>To fully assess the impact Natural England would like more information about the 82m of hedgerow to be removed, within 5km of Paston Great Barn, plus an accurate estimation of the timescale for recovery to previous condition (or better) following installation of the cable trench. The assessment should provide an indication of hedgerow quality for bats, as well as the potential long-term effects on quality with estimated timescales.</p> <p>Approximately 82m of hedgerow is used for foraging by barbastelles of</p> | |

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| | | <p>the Paston Great Barn maternity colony. However, the report does not recognise the heterogeneity of the hedgerows and, therefore, how they might be used by barbastelle bats. A hedge of low quality that is used as a commuting route, but not for foraging/roosting, may continue to be used as a route following removal of a section, whereas, a hedgerow of good quality that is used for multiple purposes may cease to be used as a roosting/foraging feature after removal of a section. As bats from the Old Hills barbastelle maternity colony have overlapping core foraging areas with barbastelle bats using Paston Great Barn SAC (Table 22.14), we advise that our comments in Information to Support HRA regarding mitigation for impacts to the SAC will also mitigate for impacts to Old Hills colony.</p> <p>We advise that, as a requirement of the development, that prior to removal of hedgerows, a mitigation plan should be drawn up and agreed with Natural England. The plan should include for the improvement of the hedgerows either side of the section to be removed including any gapping up, tree management and the development of scrub/rough grassland</p> | |

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| | | <p>margins. The mitigation plan should be in place for 7 years or until the original hedgerow has recovered fully.</p> <p>We agree with the proposals to replant hedgerows with locally relevant species and with 2m margins to encourage biodiversity. Note that protection against browsing animals will need to be in place until the shrubs are established.</p> | |
| | <p>A mosaic of approximately 11ha of broadleaved woodland, rank grassland, hedgerows and drainage ditches around Witton is used by foraging Barbastelle bats associated with the Paston Great Barn colony. Accordingly, this 11ha has been classified as an important feature for foraging Barbastelle bats and the assessment has been undertaken on this basis (impacts relate to the temporary severance of a hedgerow linking Paston Great Barn to this area). Clarification of the process that was undertaken by the Applicant is provided within Appendix 3 of this document.</p> <p>Details of hedgerow mitigation / restoration are provided at Paragraph 1186 of the HRA Report which includes a commitment for hedges to become overgrown either side of the section to be removed prior to construction. All bat and hedgerow mitigation measures are also captured within the OLEMS and secured through Requirement 24 Ecological Management Plan, which will require consultation with Natural England prior to discharge</p> <p>On this basis, the approach to determining the value of features for Barbastelle bats is appropriate and sufficient to inform the assessment.</p> | <p>Natural England acknowledge the provision of a clarification note, however, will be unable to review this document until after Deadline 1 and therefore this remains not agreed</p> <p>Natural England would like to see an estimation of the importance to bats from Paston Great Barn of the 11ha of woodland that will be fragmented by the hedgerow removal.</p> <p>Without additional information, we are unable to agree that ‘given the scale of the available alternative habitat available within the Paston Great Barn maternity colony home range, this level of habitat fragmentation is not anticipated to comprise a likely significant effect.’</p> | |

| Topic | Norfolk Vanguard Limited position | Natural England position | Final position |
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| | | <p>We advise that, as a requirement of the development, that prior to removal of hedgerows, a mitigation plan should be drawn up and agreed with Natural England. The plan should include for the improvement of the hedgerows either side of the section to be removed including any gapping up, tree management and the development of scrub/rough grassland margins. The mitigation plan should be in place for 7 years or until the original hedgerow has recovered fully.</p> <p>Without further information, we are not able to agree that there is no potential adverse effect on the integrity of the Paston Great Barn SAC in relation to the conservation objectives for the site.</p> | |
| | <p>A 300m buffer zone for potential noise impacts to birds which are features of designated sites was agreed with Natural England in January 2017 (Onshore Wintering Bird Surveys Survey Methodology Approach Update). The assessment provided within the application has been undertaken on the basis of that formal agreement of the methodology. The 300m buffer was is based on an average of the disturbance buffers detailed in Ruddock and Whitfield (2007) and is an appropriate distance for the basis of the assessment.</p> | <p>Not agreed. For the assessment of noise disturbance on birds which are features of designated sites, Natural England suggest designated sites within 500m are screened in for assessment. namely River Wensum SSSI; Dereham Rush Meadow SSSI; Dillington Carr, Gressenhall SSSI</p> <p>We advise that a detailed noise assessment is carried out for sites within 500m of the project area and mitigation provided for any impacts</p> | |

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| | | <p>identified or evidence is provided to demonstrate that there will be no additional noise experienced from construction at the designated site boundary.</p> | |
| | <p>The conclusions of no adverse effect on site integrity for all onshore sites presented in the Information to Support HRA report (document 5.3) are appropriate</p> | <p>Not agreed.</p> <p>Natural England acknowledge the provision of clarification notes covering effects to Paton Great Barn SAC and water dependent designated sites (including Norfolk Valley fens SA0, however, will be unable to review this document until after Deadline 1 and therefore this remains not agreed</p> <p>On the basis of the information provided within the application Natural raise the following points:</p> <p>River Wensum SAC further information required</p> <p>Paston Great Barn SAC – further information required</p> <p>Norfolk Valley Fens SAC – further information required</p> <p>Hedgerows: We note that a moderate adverse residual effect on hedgerows</p> | |

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| | | <p>and bats has been identified for the project as a whole (Table 22.32).</p> <p>Grassland: see our comments on the re-instatement of marshy grassland adjacent to River Wensum in Information to Inform HRA.</p> <p>Watercourses: see our comments on the requirement for further detail on measures to control sediment and pollutant release into watercourses in Information to Inform HRA.</p> <p>Hedgerows and bats: We note that moderate adverse residual impacts have been identified for hedgerows and bats.</p> | |

2.7 Development Consent Order

42. Natural England was provided with a draft of the Development Consent Order for review prior to submission. Comments were addressed where possible.
43. Natural England's relevant representation, submitted to the Planning Inspectorate on the 31st August 2018 includes comments on the draft DCO which Norfolk Vanguard Limited has addressed where possible. The draft DCO has been amended and submitted at Deadline 2 and Deadline 4.

2.8 References

Cooper, K., Boyd, S., Eggleton, J., Limpenny, D., Rees, H. & Vanstaen, K. (2007) Recovery of the seabed following marine aggregate dredging on the Hastings Shingle Bank off the southeast coast of England. *Estuarine, Coastal and Shelf Science* 75:547-558.

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Pearce, B., Hill, J.M., Wilson, C., Griffin, R., Earnshaw, S. & Pitts, J. (2011a) *Sabellaria spinulosa* Reef Ecology and Ecosystem Services. The Crown Estate 120 pages ISBN 978-1-906410-27-8. First Published 2013. This report is available on The Crown Estate website at www.thecrownestate.co.uk

Tillin, H.M. & Marshall, C.M. (2015) *Sabellaria spinulosa* on stable circalittoral mixed sediment. In Tyler-Walters H. and Hiscock K. (eds) Marine Life Information Network: Biology and Sensitivity Key Information Reviews, [online]. Plymouth: Marine Biological Association of the United Kingdom. Available from: <http://www.marlin.ac.uk/habitats/detail/377>

The undersigned agree to the provisions within this SOCG

| | |
|--------------|-----------------------------------|
| Signed | K. Louise Burton |
| Printed Name | K. Louise Burton |
| Position | Senior Adviser Southern North Sea |
| On behalf of | Natural England |
| Date | 20 March 2019 |

| | |
|--------------|--------------------------------------|
| Signed | R Sherwood |
| Printed Name | Rebecca Sherwood |
| Position | Norfolk Vanguard Consents Manager |
| On behalf of | Norfolk Vanguard Ltd (the Applicant) |
| Date | 20 March 2019 |