

Norfolk Boreas Offshore Wind Farm Applicant's Response to Norfolk County Council's Local Impact Report

Applicant: Norfolk Boreas Limited
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Photo: Ormonde Offshore Wind Farm

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Glossary of Acronyms

DCO	Development Consent Order
dDCO	Draft Development Consent Order
ES	Environmental Statement
HGV	Heavy Good Vehicle
HVDC	High Voltage Direct Current
LEP	Local Enterprise Partnership
LIR	Local Impact Report
NCC	Norfolk County Council
O&M	Operation and Maintenance
OFTO	Offshore Transmission Operator
PPA	Planning Performance Agreement
SoCG	Statement of Common Ground

1 Introduction

1. In accordance with the Rule 8 letter published on the 19th of November 2019, Norfolk County Council has submitted a Local Impact Report (LIR) at Deadline 2 in relation to the application for a Development Consent Order (DCO) for Norfolk Boreas Offshore Wind Farm (the Project) as submitted by Norfolk Boreas Limited (the Applicant). This provides a summary of Norfolk County Council's position on the Application on various matters including:
 - Grid Connection and Electricity Supply Issues
 - Socio-Economic Issues
 - Wider Community Issues and Impact on Business
 - Commercial Fishing
 - Local Highways
 - Public Health
 - Flooding and Drainage
 - Discharge of Requirements
 - Conclusions

2 Norfolk County Council Local Impact Report

2.1 Summary Response

2. The Applicant has responded to matters raised by Norfolk County Council below. A Statement of Common Ground (SoCG) (ExA.SoCG-19.D2.V1 / REP2-050) has also been produced between Norfolk County Council and Norfolk Boreas Limited, which provides a summary of matters agreed and those under further discussion, as submitted at Deadline 2. The Applicant will continue to engage with Norfolk County Council on points still under discussion in order to reach agreement in due course. Where further progress is made between the Applicant and Norfolk County Council, an updated version of the SoCG will be submitted at an appropriate deadline. The final position of the SoCG will be submitted on or before Deadline 9 on the 29th of April 2019.

2.2 Full Response

Table 2.1 Applicant's response to Norfolk County Council Local Impact Report

Norfolk County Council Local Impact Report	Applicant's Response
<p>1.0 Introduction</p> <p>1.1 This report sets out Norfolk County Council's position with regard to the submitted Development Consent Order (DCO) application made under section 56 of the Planning Act (2008).</p> <p>1.2 The County Council is a statutory consultee given that the proposed development is a Nationally Significant Infrastructure Project (NSIP) under the above Act and is located both:</p> <p>(a) Adjacent to the County – offshore Wind Farm located in the North Sea (see Map 1 – Appendix 1); and</p> <p>(b) Within the County with regard to the supporting onshore grid connection infrastructure (see Map 2 Appendix 2).</p> <p>1.3 The principal role of the County Council in responding to the above wind farm and ancillary onshore infrastructure application, is in respect of the Authority's statutory role as:</p> <ul style="list-style-type: none"> • Highways Authority; • Minerals and Waste Planning Authority; • Lead Local Flood Authority; and • Public Health responsibilities. <p>1.4 In addition, the County Council have an advisory environmental role and economic development function, which has also fed into the response to the DCO application.</p> <p>1.5 The issues raised below simply relate the County Council's statutory and advisory functions.</p>	<p>The scope of Norfolk County Council's remit is noted.</p>
<p>2.0 Background</p> <p>2.1 The County Council recognises this as a DCO application for an offshore windfarm and onshore ancillary grid connection infrastructure in Norfolk, which will be determined by the Secretary of State for Business, Energy and Industrial Strategy. The application is defined as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008.</p>	<p>The Applicant would refer to the SoCG with Norfolk County Council (ExA.SoCG-19.D2.V1 / REP2-050) which summarises the consultation was has been undertaken to date.</p>

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<p>2.2 The County Council responded to the pre-application (Section 42 Consultation) version of this proposal in November 2018. At that time the County Council broadly supported the proposal subject to a number of detailed matters being resolved (see Appendix 3).</p> <p>2.3 It is understood if both the Norfolk Vanguard and Norfolk Boreas projects secure consent and progress to construction, the advantages of shared infrastructure will be realised. However, the Norfolk Boreas project needs to consider the possibility of the Norfolk Vanguard project not being built. For Norfolk Boreas to be considered as an independent project by the Planning Inspectorate, this scenario must be provided for within the Norfolk Boreas DCO application. Therefore, there are two scenarios which are considered within the DCO application:</p> <ul style="list-style-type: none"> • Scenario 1 - Norfolk Vanguard proceeds to construction and installs ducts and other shared enabling works for Norfolk Boreas. This scenario is optimal and the most probable outcome. • Scenario 2 - Norfolk Vanguard does not proceed to construction and Norfolk Boreas proceeds alone. The Norfolk Boreas EIA will also consider associated constraints and opportunities, under Scenario 2. <p>2.4 In the intervening period between the pre-application and submission of the Development Consent Order (DCO) application, the County Council attended the examination hearings on the Norfolk Vanguard project and through discussion at these hearings the majority of issues were resolved. However, the County Council is still working closely with Vattenfall on any remaining outstanding issues.</p>				
<p>3.0 The Proposal – Development Consent Order Application</p> <p>3.1 The County Council has assessed the proposal on the following basis:</p> <p>Key Offshore Infrastructure</p> <table border="1" data-bbox="206 1278 1106 1377"> <tr> <td data-bbox="206 1278 510 1377">Location and Distance Offshore</td> <td data-bbox="510 1278 555 1377">:</td> <td data-bbox="555 1278 1106 1377">Located in one distinct area approximately 73 km respectively off the Norfolk coast (see Maps attached).</td> </tr> </table>	Location and Distance Offshore	:	Located in one distinct area approximately 73 km respectively off the Norfolk coast (see Maps attached).	<p>Noted.</p> <p>The Applicant refers to Environmental Statement (ES) Chapter 5 Project Description (APP-218) for a full project description.</p> <p>To clarify:</p> <ul style="list-style-type: none"> • the number of turbines is 90 to 180, each having a rated capacity of between 10MW and 20MW, the small 9MW was removed, reducing the maximum number to 180;
Location and Distance Offshore	:	Located in one distinct area approximately 73 km respectively off the Norfolk coast (see Maps attached).		

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Total Site Area		725 sq.km.
Proposed Capacity	:	Installed capacity of 1.8 Giga-Watt (sufficient to supply 1.3 million households with electricity).
Number and size of turbines	:	Range between 90 x 20MW to 200 x 9MW turbines with a maximum tip height of up to 350 metres
Offshore works	:	Interconnector Cables and foundations:
	:	Up to four cables to landfall totalling 500 km (400 within the offshore cable corridor and 100 within the Norfolk Boreas site).
	:	Up to 2 Offshore electrical (sub-station) platforms and 1 accommodation platforms. Maximum size 35,000 sqm. per platform and maximum height of up to 100 m.
Key Onshore Works		
Landfall Location	:	Immediately south of Happisburgh (1.5 km zone identified - see Maps attached) – all associated infrastructure will be located underground.
Cable route	:	Buried cable route between Happisburgh and grid connection at Necton Substation – approximately 60 km (See Maps attached). Up to 4 cable trenches will be required along an identified 45 m search corridor. The eventual corridor to be submitted with the application (S56) will be 100m; sufficient to accommodate both the Vanguard and Boreas projects in one duct laying operation. The above works would be sufficient to facilitate both the Vanguard and Boreas Projects and forms part of the Vanguard application.
Necton - National Grid Sub-station (Extension)	:	The existing Necton National Grid substation (140 m x 145 m) would require an extension to

- The onshore cable route submitted with the application and defined by the order limits is 45m wide. This cable route is sufficient to accommodate Norfolk Boreas and Norfolk Vanguard, or Norfolk Boreas alone;
- The duct installation required under Scenario 2 will required up to 2 trenches, one per circuit, the number of trenches was reduced following the commitment to HVDC transmission;
- Under Scenario 1 the existing National Grid substation would be extended up to 135m in an easterly direction resulting in an additional footprint of 20,250m². This is in addition to the existing substation and the extension required to accommodate Norfolk Vanguard (30,000m²).
- Under Scenario 2 the existing National Grid substation would be extended up to 200m in an easterly direction resulting in an additional footprint of 30,000m², in addition to the existing substation.
- The overhead line modifications are only required under Scenario 2, under Scenario 1 these works would have been completed by Norfolk Vanguard.
- Details of the different works required under the scenarios is summarised in ES Appendix 5.1 (APP-547).
- The indicative programme of works is dependent on the scenarios; Scenario 1 works commencing in 2022 to 2027 and Scenario 2 commencing in 2012 to 2026.

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	<p>accommodate the Norfolk Boreas connection points (see Map):</p> <ul style="list-style-type: none"> • Easterly extension 130 m; • Westerly extension 200 m <p>(total Foot-print 26,000 sqm.)</p> <ul style="list-style-type: none"> • Maximum height 15 m. <p>The extension would take the existing sub-station from 20,300 sqm. to 65,250 sqm. (tripling the size i.e. when the Norfolk Vanguard (part) is taken into account as well). The above works would be sufficient to facilitate both the Vanguard and Boreas Projects.</p>	
<p>Necton - New Sub-station Boreas Project</p> <p>HVDC Converter</p>	<p>: A new onshore substation will be required with a total maximum land requirement to the perimeter fence of 250m x 300m (75,000 sqm.);</p> <p>Maximum building height 19 m (HVDC);</p> <p>Plus, temporary construction area 200 m x 100 m (20,000 sqm.);</p> <p>The proposed substation will be located near to the Necton National Grid Substation – see Map attached.</p> <p>This is in addition to a similar size sub-station needed for Norfolk Vanguard project.</p>	
<p>Overhead Line Modifications</p>	<p>: Two new overhead line towers would be required in close proximity to the existing corner tower (to the north east of the existing Necton substation) with a maximum height of 55m. The existing corner tower would be demolished such that the net new number of towers is one.</p>	

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	<p>Alternatively, the existing corner tower could be modified, and one new terminal tower constructed in close proximity. The design approach taken will be confirmed at the detailed design phase.</p> <p>The above works would be sufficient to facilitate both the Vanguard and Boreas Projects and forms part of the Vanguard application.</p>	
	<p>: Construction time approximately 24-30 months for sub-station and pylon work (this includes groundworks and civil construction elements).</p>	
Ancillary Works	<p>: The onshore work will require, <i>inter alia</i>:</p> <ul style="list-style-type: none"> Construction compounds (see Map)– i.e. support buildings private road and hard standing; Construction of temporary haul roads and access tracks along the onshore cable route; Archaeological and ground investigation; Improvements to highway verges; Highway and private access roads; Works to move sewers, drains; and cables; Works affecting non-navigable rivers, streams or water courses; Landscaping and other works to mitigate any adverse effects of the construction; operation, maintenance or decommissioning of the project including ecological monitoring and mitigation works. 	
	<p>: Construction timetable for above onshore works:</p>	

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<ul style="list-style-type: none"> • The pre-construction works for the onshore cable route would have been completed by Norfolk Vanguard and commencing in 2022 • There are two programmes for installing landfall duct installation - the preferred option is to do them after Norfolk Vanguard in 2024 and 2025. There is however a potential for option for them to be installed at the same time as Vanguard. • The cable pulling is scheduled for 2026 to 2027 • Offshore project substation to be completed in two phases by 2026-2027 <p>The National Grid substation extension works are likely to run in parallel to the onshore project substation works, commencing with pre-construction works in 2022.</p>	
<p>4.0 Local Impacts</p> <p>4.1 This section of the report assesses the Environmental Statement (ES) and other supporting documentation in respect of the County Council's key functions and sets out the Authority's proposed response / comments. The response largely relates to the onshore infrastructure required to connect the electricity generated to the National Grid. It should be noted that discussions are on-going with the applicant with regard to over-coming any technical issues.</p> <p>Overview</p> <p>4.2 The proposal has a maximum capacity of 1.8 Giga Watts (1,800 MW) of electricity, sufficient to power approximately 3.9 million households (i.e. this represents more than nine times as many dwellings in Norfolk (2011)).</p>	<p>The Applicant notes that Norfolk County Council agree with the principle of offshore renewable energy.</p> <p>The Applicant has addressed comments below to each of the specific points identified by Norfolk County Council and continues to work with Norfolk County Council to update their Statement of Common Ground (ExA.SoCG-19.D2.V1 / REP2-085).</p>

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<p>Current operational offshore capacity in the UK is just over 4 GW (2015), therefore if consented the Norfolk Boreas proposal would potentially increase the UK's installed capacity by 45%.</p> <p>4.3 The proposal will generate thirty times more energy than the Scroby Sands wind farm (60 MW) and more than five and half times more energy than the Sheringham Shoal wind farm (317 MW). As such the proposal would make a serious contribution to the Government's Renewable Energy targets and objectives (see Section 5 below).</p> <p>Comment</p> <p>4.4 The principle of this offshore renewable energy proposal is supported as it is consistent with national renewable energy targets and objectives, subject to the detailed comments below being satisfactorily resolved with the applicant.</p>	
<p>Grid Connection and Electricity Supply Issues</p> <p>4.5 The decision was taken to use High Voltage Direct Current (HVDC) technology. This decision removes the requirement for a cable relay station and decreases the working width of the onshore cable corridor from 50m to 35m, thereby reducing potential impacts along the cable corridor.</p> <p>4.6 Grid connection is proposed at Necton and would involve, as indicated above, a significant extension to the existing sub-station taking it from just over 20,000 sqm to over 65,000 sqm (total footprint with the Norfolk Vanguard Project). In addition, there would be the need for a new substation for both the Norfolk Vanguard and Norfolk Boreas projects comprising a further 75,000 sqm each. There would also be a need for up-grading the power lines comprising a new tower (worst case scenario).</p> <p>4.7 Officers have been in discussion with Vattenfall and other potential offshore windfarm developers regarding the potential for electricity generated from these proposals to be used within the local distribution networks (132 kv and below) i.e. to assist where there are electricity deficits. These discussions have also involved National Grid who have made a formal and legally binding grid connection "offer" to Vattenfall.</p> <p>4.8 National Grid have indicated that the onshore cables from the wind farms will ultimately belong to a future Offshore Transmission Operator (OFTO). In</p>	<p>The Applicant provided a response with regards to the opportunities to facilitate the use of the electricity generated within local electricity distribution networks in Comments on Relevant Representations (AS-024) Table 28, Row 2 and in summary:</p> <p>The onshore connection point was determined through a statutorily mandated process involving both the Applicant and National Grid, to identify a direct connection to the 400kV national transmission system. There are no planning or regulatory mechanisms through which the Applicant could identify direct 'infeeds' into the regional distribution network in Norfolk.</p>

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<p>such circumstances, where the main connection point for the OFTO system is at a transmission substation (National Grid), the regulatory arrangements governing OFTO infrastructure do not provide for secondary interconnection between the OFTO system and a local distribution network operator (DNO) (i.e. UK Power Networks). In other words, there is no opportunity of “tapping” into the transmission cables and feeding into the local electricity transmission network.</p> <p>Comment</p> <p>4.9 It is felt that Vattenfall should work with National Grid and UK Power Networks to consider options regarding the potential to feed electricity into the local transmission networks.</p> <p>In addition, the County Council will continue to work with the Local Enterprise Partnership (LEP) through the TRI - Local Energy Strategy, in order to lobby central government to make legislative changes to overcome the obstacles to secondary inter-connection raised above.</p>	
<p>Socio-economic Issues</p> <p>4.10 There are potentially significant economic benefits that may arise from the Boreas proposal in terms of:</p> <ul style="list-style-type: none"> • Local employment creation; • Business sectors affected by construction; and • Operations and Maintenance (O&M) of the wind turbines. <p>4.11 The ES suggests that the Norfolk Boreas and Norfolk Vanguard projects will in total create up to 481 jobs during construction and up to 175 jobs during operation. The ES indicates that “there is the potential for moderate long-term benefits to the region due to increased employment across the supply chain serving the offshore wind industry”.</p> <p>4.12 The County Council’s Economic Development team has enjoyed regular, constructive dialogue with many members of the Vattenfall team. The company is engaging with local supply chain companies and seems keen to ensure that local businesses can benefit as far as possible from a wide range of contracts as they emerge. The company also shares the County Council’s ambition to attract new investment into the area, in particular new</p>	<p>The Applicant notes Norfolk County Council’s support for continued pro-active engagement.</p> <p>Vattenfall (on behalf of Norfolk Boreas Limited) is actively seeking to collaborate with stakeholders to support, complement and enhance where appropriate, local skills development programmes. The aim shared with these stakeholders is to work towards a sustainable and resilient employment pipeline, and to channel into / retain more local intellectual and social capital within the green energy sector. To date this has included collaborations with University of East Anglia, University Technical College Norfolk, local schools, East of England Energy Group, Norfolk County Council, New Anglia Local Enterprise Partnership and others.</p> <p>As Norfolk County Council recognise, the Applicant has committed to a Skills and Employment Strategy, which is secured in the dDCO through Requirement 33.</p>

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<p>manufacturing capacity and has been working with County Council's Economic Development Team in a number of areas. The company has an excellent relationship with Gt Yarmouth Port, which hopefully will lead to its use both during the construction phase and later in respect of operations and maintenance (O&M).</p> <p>4.13 It is understood that Vattenfall has signed a Memorandum of Understanding with Peel Ports Great Yarmouth in 2017 to explore locating the Swedish energy group's operations base at the East Anglian facility. Both Vattenfall and Peel Ports expect to finalise their agreement in due course. If Vattenfall build both wind farms, they expect to employ up to 150 skilled, local technicians to maintain their projects for a minimum of 25-years.</p> <p>4.14 The County Council is working with all energy companies and the New Anglia LEP to promote this sector and develop a Skills Strategy for the types of skills required for young people in schools and colleges. In addition, the County Council is working to create:</p> <ul style="list-style-type: none"> • Apprenticeships, • Work experience; and • Internship opportunities at an appropriate stage. <p>4.15 Vattenfall has included a Skills and Employment Strategy Planning Condition/ Requirement within the Boreas DCO, ensuring that there is a skills legacy to the project. A similar requirement has been included in the Norfolk Vanguard DCO after discussion with the County Council at the Examination Hearings earlier in the year.</p> <p>Comment</p> <p>4.16 The County Council welcomes the inclusion within the draft DCO of a Planning Requirement, which will ensure that a Skills and Employment Strategy is prepared. Notwithstanding this the County Council should continue to work pro-actively with Vattenfall to demonstrate the economic benefits of using the Port facilities at Great Yarmouth for:</p> <ul style="list-style-type: none"> • Construction; assembly and manufacture of windfarm components; and • Operations and maintenance. <p>The County Council should also continue to work with the applicant to develop the creation of apprenticeships; work experience and internships.</p>	<p>The Applicant recognises the economic benefits of using local port facilities at Great Yarmouth and has signed an agreement with Peel Ports that reserves space for the potential future operations and maintenance use of the site. This is subject to DCO consent award and other regulatory considerations.</p>

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<p>Wider Community Issues and Impacts on Business</p> <p>4.17 The agreed position in the Statement of Common Ground at the end of the Norfolk Vanguard examination on this topic was: "Norfolk Vanguard Ltd. is committed to exploring options for delivering a provision for communities, with the aim of recognising hosts and accounting for change, where benefits acknowledge and address tangible local change. The form of the benefit and its purpose will be explored with relevant stakeholders at the appropriate time, separate to the DCO process." This same commitment will be made by Norfolk Boreas.</p> <p>4.18 The reduction in the potential impacts and disruption to business as a consequence of using HVDC technology is welcomed, however, it is felt that Vattenfall should commit to providing appropriate compensation for businesses and communities adversely affected by the construction works.</p>	<p>As detailed in the SoCG with Norfolk County Council (ExA.SoCG-19.D2.V1 / REP2-050), the Applicant is committed to exploring options for delivering a provision for communities, with the aim of recognising hosts and accounting for change, where benefits acknowledge and address tangible local change. The form of the benefit and its purpose will be explored with relevant stakeholders at the appropriate time, separate to the DCO process.</p>
<p>Commercial Fishing</p> <p>4.19 While commercial fishing is an offshore issue, it is considered appropriate to comment on the impacts the above proposal may have on this sector as Norfolk is home to many commercial fishing activities from its numerous ports and landing areas (i.e. potential economic issue).</p> <p>4.20 The ES considers the impact of the proposed windfarm and ancillary infrastructure (offshore cable route; substations; convertor stations and accommodation blocks) on the commercial fishing sector. The type of fishing carried out in the Array area principally comprises:</p> <ul style="list-style-type: none"> • Local UK Static gear Fishing potting by UK vessels (i.e. for brown crab, lobster and Whelk); • Dutch Vessels undertaking trawling <p>4.21 The impacts arising are most likely during construction leading to temporary loss, or restricted access to, fishing grounds and leading to increased steaming times to alternative fishing grounds. However, the ES concludes that the impacts will largely be negligible in the longer term.</p> <p>4.22 The ES also points out that the impact on commercial fishing has been reduced as a consequence of:</p> <p>(a) Reducing the number of turbines to a maximum of 180; and</p>	<p>The Applicant notes Norfolk County Council's support for the mitigation as set out in the Environmental Statement. It is the intention of the Applicant to promote coexistence, and mitigate for potential disruption to commercial fishing activity. However, where there is a requirement to temporarily relocate legitimate local fishing effort as a result of works associated with the project, disruption payments will be considered in line with Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) guidance (FLOWW, 2014).</p>

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<p>(b) Committing to using HVDC technology which uses fewer cable (on the seabed) thus reducing potential snagging issues of fishing gear.</p> <p>4.23 In terms of mitigation and minimising impact, the applicant has indicated that they will include, for example:</p> <ul style="list-style-type: none"> • The provision of timely notices to mariners and the fishing community on any proposed works; • Undertaking appropriate liaison with all relevant fishing interests; and • Ensuring the layout of the windfarm minimises any future disruption to fishing in the area. <p>Comment</p> <p>4.24 The County welcomes the revised/amended design of the above proposal and mitigation measures set out in the applicant's ES. However, where there is likely to be a demonstrable impact (i.e. during: construction; operation and/or decommissioning) on commercial fishing affecting communities in Norfolk, it is considered that Vattenfall should provide appropriate compensation (i.e. disturbance payments) to those fishing businesses affected. It is understood that Vattenfall are prepared to provide compensation in appropriate circumstances.</p>	
<p>Local Highways</p> <p>4.25 Detailed discussions and negotiations will remain on-going throughout the application process, particularly in respect of construction traffic management plans; and other travel related planning. Notwithstanding these ongoing discussions, officers have assessed the traffic implications arising from both scenarios as follows: -</p> <p>Scenario 1 - Vanguard and Boreas are both delivered, and Vanguard installs ducts and carries out other shared enabling works prior to Boreas commencing.</p> <p>For the main part, traffic impacts have already been assessed during the formal Norfolk Vanguard public hearings, which were conducted by the Planning Inspectorate. The only predicted additional highway impact relates</p>	<p>The Applicant is engaging with Norfolk County Council in relation to potential traffic and transport impacts and the SoCG with Norfolk County Council (ExA.SoCG-19.D2.v1 / REP2-050) details these matters as agreed, or subject to further discussion as appropriate.</p> <p>The Applicant can confirm that the potential traffic and transport impacts associated with the cable pulling have been assessed under Scenario 1 in ES Chapter 24 (APP-237).</p> <p>The Applicant refers to Comments on Responses to ExA First Written Questions (ExA.WQ-1.D3.V1) submitted at Deadline 3, where the Applicant has responded to the specific concerns raised by Norfolk County Council Highways Authority in Q1.2.3, Q4.1.5, Q14.0.1, Q14.0.6, Q14.0.7 and Q14.0.8.</p>

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<p>to Boreas pulling cables through ducts that will have been installed by Norfolk Vanguard.</p> <p>Phasing for the pulling of cables will be determined by the number of offshore phases. If two offshore phases are undertaken, the cables will be pulled through the ducts in up to two separate phases and the onshore project substation will also be constructed in up to two separate phases. Boreas will reuse Norfolk Vanguard accesses to the onshore cable route for cable pulling, including construction accesses and any retained/ reinstalled sections of running track. Cable drums will be delivered by HGV low loader to open joint pits and loaded onto a temporary hard standing. A winch is attached to the cable, pulling the cable off the drum from one joint pit to another, through the buried cable ducts. Cable jointing can be conducted once both lengths of electrical cable that terminate within a joint pit have been installed.</p> <p>Comment - At this stage the traffic impact from the cable pull has not yet been assessed but it is not expected to be significant.</p> <p>Scenario 2 Norfolk Vanguard does not proceed, and Boreas proceeds alone. The main civil engineering works will take place first, which will comprise the installation of the cable ducts along the full length of the onshore cable route; after this, the electrical infrastructure (onshore cable pulling and substation plant) will be installed either in a single phase or in two separate phases. Under this scenario, the traffic impacts should be less than those already assessed by the Planning Inspectorate as part of the Vanguard project. This is because the duct installation generates the most traffic, but under this scenario less duct installation will be required – i.e. only ducting for Boreas rather than ducting for both Boreas and Vanguard. To ensure only one scenario is implemented, and that the relevant local authority have notice of which scenario is implemented, a requirement to this effect is included in the Development Consent Order.</p> <p>Programme of works The current indicative construction programmes anticipate that Norfolk Vanguard is expected to undertake pre-construction works in 2020 – 2021</p>	

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<p>with the main duct installation works taking place in 2022 - 2023. Under Scenario 1, Norfolk Boreas anticipates commencing construction in 2022 with operation and maintenance commencing in 2028/9.</p> <p>Comment – Under Scenario 1 (Norfolk Vanguard proceeding) the County Council as Highway Authority does not have any additional comments to make to those made to the Norfolk Vanguard scheme and discussed at the Examination Hearings. However, in the event of Scenario 2 and the Boreas Scheme continuing as an independent project the County Council would need to repeat the concerns/issues raised to the Norfolk Vanguard scheme.</p>	
<p>Public Health</p> <p>4.26 The County Council would expect detailed matters relating to construction noise and local environmental health to be addressed by the relevant District Councils. Providing the District Councils are satisfied with the proposal in relation to the above matters, the County Council would not wish to raise any public health concerns at this time.</p>	<p>The Applicant notes that Norfolk County Council has deferred to the district councils on these matters relating to public health. The Applicant refers to the SoCGs with Breckland Council (ExA.SoCG-2.D2.V1 / REP2-039)), North Norfolk District Council (ExA.SoCG-20.D2.V1 / REP2-052) and Broadland District Council (ExA.SoCG-3.D2.V1 / REP2-047), where these matters related to environmental health are detailed.</p>
<p>Flood and Drainage</p> <p>4.27 The Boreas Project has provided a Non-technical Summary together with outline plans including an Outline Operational Drainage Plan. (8.21) and Environmental Statement Volume 1 - Chapter 20. These documents are still at high level, but mirror what has previously been submitted (i.e. included in the Preliminary Environmental Impact Report).</p> <p>At this stage it has not been determined what method of discharging surface water will be utilised in the final design and no assessment of the current or proposed runoff rates has been undertaken. However, the aim will be to discharge surface water runoff as high up the hierarchy of drainage options as reasonably practicable, (that is: i) into the ground (infiltration); ii) to a surface water body; iii) to a surface water sewer, highway drain or another drainage system; or iv) to a combined sewer). Detailed infiltration testing will be undertaken in accordance with Buildings Research Establishment (BRE) Digest 365 Soakaway Design within the above ground operational areas. If infiltration is proven to be unfavourable, then Greenfield runoff rates for the</p>	<p>The Applicant notes Norfolk County Council's support of sustainable drainage systems for the project and the detail provided in the Outline Operational Drainage Plan (document 8.21, APP-712).</p> <p>In the Comments on Relevant Representations (AS-024) the Applicant provided clarification on;</p> <ul style="list-style-type: none"> National Grid substation extension footprints (AS-024, Table 15, row 6); the worst case numbers for the operational footprints for the National Grid extensions have increased very slightly to cover the possible maximum extent required i.e. Scenario 1 eastern extension 135m x 150m (formally 131m x 142m) and Scenario 2 western extension 200m x 150m (formally 199m x 142m). Any drainage calculations undertaken and included in the final Operational Drainage Plan, developed post-consent, will reflect the final design parameters and dimensions.

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site shall be agreed. The post development runoff rates will be attenuated to the equivalent Greenfield rate for all rainfall events up to and including the 1% annual probability (or 2 l/s/ha). This approach laid out in the outline plan is acceptable to the LLFA.

Comment

4.28 It is noted that the maximum land take areas for the construction of the project substation and National Grid (NG) substation extension and the permanent footprint of the NG substation extension have increased, which must be accounted for in any drainage calculations.

It is also noted at for trenched crossing locations the cable will be buried a minimum of 1.5m below the bed level, as opposed to 2m in the trenchless crossing scenarios. Clarification of this minimum depth is required.

It should be noted that where the proposals involve works to any ordinary watercourse (temporary or permanent) a consent will be required. The number of these, where applicable, should be determined and applications for block, or phased consents should be made to the appropriate authority, including the flood and water management team at Norfolk County Council or the Internal Drainage Board. Also, a number of access routes will need to cross existing ditches and watercourses and environmental permits and consents are likely to be required for each crossing point.

All issues previously raised in the comments sent to the applicant in respect of the pre-application consultation in November 2018 still apply.

All the above matters should be addressed by the applicant and covered through appropriate Planning Conditions / Requirements. It is understood that as part of the submitted DCO, Planning Requirements are set out which would enable the above matters to be resolved post consent through:

- (a) An agreed Operational Drainage Plan to be agreed with the County Council as LLFA and the Environment Agency;
- (b) Code of Construction Practice with specific reference to surface water drainage; and

- The minimum burial depth (AS-024, Table 15, row 7): at watercourse crossings the minimum depths below the bed level is dependent on the crossing methodology. As stated for trenched crossings, the minimum depth is 1.5m. However, at trenchless crossings this minimum depth is increased to 2m due to the requirements of the crossing method.
- Watercourse crossing consents (AS-024, Table 15, row 5 Land Drainage Consents are dealt with under the DCO pursuant to Article 7(3), Article 15, and Schedule 17, Part 7. Article 7(3) provides for the disapplication of various additional consents which would otherwise be required from the Environment Agency, internal drainage boards or lead local flood authorities under the Water Resources Act 1991 and the Land Drainage Act 1991. The Order dis-applies this requirement for in-principle consent in order to ensure that the project can proceed and instead provides for approval of detailed plans in the protective provisions for the Environment Agency and the relevant drainage authorities in Schedule 17.. Schedule 17, Part 7 provides control mechanisms to govern the interaction, such as the need for the Applicant to submit plans for approval prior to constructing the relevant works together with a process for the drainage authority.
In addition Requirement 25 of the DCO states that crossing, diversion and subsequent reinstatement of any designated main river or ordinary watercourse may not commence until a scheme and programme for any such crossing, diversion and reinstatement in that stage has been submitted to and, approved by the relevant planning authority in consultation with Norfolk County Council, the Environment Agency, relevant drainage authorities and Natural England.

The Applicant refers to the SoCG with Norfolk County Council (ExA.SoCG-19.D2.V1 / REP2-050) where matters on surface water drainage are discussed further and have been agreed by both parties.

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<p>(c)Water Course Crossing requirements.</p> <p>4.29 Subject to the inclusion of these Requirements in the final DCO, the County Council does not have any objection to the proposal in terms of surface water drainage matters.</p>	
<p>5.0 Discharge of Requirements</p> <p>5.1 As part of the application process there will be a need for a series of planning requirements attached to the final consent (Development Consent Order) covering a range of detailed matters. In the event that the DCO is consented these planning “requirements”, will ultimately need to be discharged as the development progresses. The discharge of requirements is normally undertaken by the determining authority (i.e. local planning authority - LPAs) for non-NSIP schemes. For NSIP schemes there is the potential for the discharge of conditions/requirements to be undertaken by either the District Councils (LPAs) and/or the County Council.</p> <p>Comment</p> <p>5.2 It is understood through discussions on the Norfolk Vanguard project DCO that each local authority discharges those requirements within their respective area/ statutory remit, for consistency the Norfolk Boreas DCO should follow the same approach to the discharging of conditions. It is also understood that the applicant is prepared to fund the above “discharging” work given the significant resource implication. The discharge of requirements and their funding is expected to be covered through a Planning Performance Agreement (PPA).</p>	<p>It has been agreed that the local authority will discharge the requirements within their respective area/statutory remit – pursuant to the definitions under the dDCO and the split of "stages of works". The Applicant agrees that a consistent approach with Norfolk Vanguard, and the Norfolk Vanguard DCO, should be adopted with the drafting of the Requirements and the subsequent discharge process. The Applicant is also exploring the potential for a Planning Performance Agreement.</p>
<p>6.0 Conclusion</p> <p>6.1 Norfolk County Council fully supports the principal of offshore wind energy, which is consistent with national policies on energy particular in respect of:</p> <ul style="list-style-type: none"> • Reducing greenhouses; • Providing energy security; and • Maximising economic opportunities. 	<p>The Applicant has responded to the points raised by Norfolk County Council and will continue to engage throughout the Examination and through the SoCG (ExA.SoCG-19.D2.V1 / REP2-050) together with engaging on developing skills and employment opportunities.</p>

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<p>6.2 The above report shows that while the County Council supports the broad principal of this development proposal, there are still outstanding Highway issues that need to be resolved.</p> <p>6.3 In addition to these issues there are wider strategic matters which need to be addressed and explored through the DCO process in order to maximise the potential socio-economic benefits, including:</p> <p>(a) Wider consideration to the need and possibility for secondary interconnection, which would allow for electricity generated from the offshore wind farm to be used within the local distribution networks along the cable route;</p> <p>(b) Economic benefits – use of ports in Norfolk:</p> <ul style="list-style-type: none"> • During the construction and assembly phase; • As a location for basing operation and maintenance facilities; and • As venues for seeking to attract manufacturing investment. <p>6.4 The County Council continues to work with Vattenfall in order to resolve the above issues.</p>	