

**Norfolk Vanguard Offshore Wind Farm**

# **Statement of Common Ground**

**Ministry of Defence – Defence  
Infrastructure Organisation**



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

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## 1 INTRODUCTION

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1. This Statement of Common Ground (SoCG) has been prepared with the Defence Infrastructure Organisation (DIO) (on behalf of the Ministry of Defence (MoD)) and Norfolk Vanguard Limited (hereafter 'the Applicant'). DIO manages the military estate on behalf of the MoD, and "DIO Safeguarding" manages the formal consultation process through which the MoD is engaged on development proposals, including those involving wind turbines. This document will set out the areas of agreement and disagreement identified in relation to the Development Consent Order (DCO) application for the Norfolk Vanguard Offshore Wind Farm (hereafter 'the project') as discussed during Section 42 consultation and in post application engagement relating to MoD aviation and radar interests.
2. This SoCG comprises an agreement log which has been structured to reflect topics of interest to the MoD on the Norfolk Vanguard DCO application (hereafter 'the Application'). Topic specific matters agreed, not agreed and actions to resolve between the MoD and the Applicant are included.
3. The Applicant has had regard to the Guidance for the examination of applications for development consent (March 2015) when compiling this SoCG. Points that are not agreed will be the subject of ongoing discussion wherever possible to resolve, or refine, the extent of disagreement between the parties.

### 1.1 The Development

4. 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 70km and 47km 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 60km to the onshore project substation and grid connection point near Necton, Norfolk.
5. Once built, Norfolk Vanguard would have an export capacity of up to 1800MW, with the offshore components comprising:
  - Wind turbines;
  - Offshore electrical platforms;
  - Accommodation platforms;
  - Met masts;

- Measuring equipment (LiDAR and wave buoys);
  - Array cables;
  - Interconnector cables; and
  - Export cables.
6. 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 MoD

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

### 1.2.1 Pre-Application

8. The Applicant has engaged with the MoD 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. The main focus of discussions with the MoD has been on overcoming the expected impact of the NV OWF on the MoD Air Defence Radar (ADR) at Remote Radar Head (RRH) Trimingham in Norfolk.
9. Consultation with the MoD on the potential impact of Norfolk Vanguard on Trimingham ADR has been ongoing since 2015. Consultation has centred on understanding the extent of the impact on the Trimingham ADR and potential mitigation options available. Mitigation discussions have considered the suitability of the Trimingham TPS 77 ADR's in-built capability to mitigate the impact of wind turbine developments by means of 3-dimensional Non-Automatic Initiation Zones (NAIZs). Table 1 provides an overview of meetings and key correspondence undertaken with the MoD.
10. During formal (Section 42) consultation, MoD provided comments on the Preliminary Environmental Information Report (PEIR) by way of a letter dated 11th December 2017. The MoD response included comments in relation to radar issues as well as the following aviation related comments on:

- The potential need for aviation lighting to be installed. Although the UK military low flying system finishes 2 nautical miles beyond the coast line, military low flying activities may be conducted beyond this over the sea. As such, the MoD may request that structures featured in the scheme (such as platforms) are fitted with aviation warning lighting when there is no mandatory requirement for installation; and
- The extent of MoD safeguarding zones to be considered, with respect to the onshore element of the project, in the evaluation of the cable route and associated infrastructure.

### 1.2.2 Post-Application

11. Since submission of the DCO application, further discussions have been undertaken with the MoD to agree suitable technical mitigation.
12. On 24th August 2018 the MoD released an industry-wide statement outlining concerns over the operational impact of wind turbines on the TPS-77 ADR. The statement notes that trials against 2 offshore wind farms had recently been carried out which identified that these windfarms were causing unexpected degradation of the radar and that further evaluation of the findings of the trials would be required. As a result, the MoD announced that it was suspending the receipt and assessment of technical mitigation proposals relating to TPS 77 radars for multi-turbine wind farms pending a further review which was expected to take at least 6 months from the date of the statement.
13. Further to this announcement, on 14 September 2018, the MoD confirmed that the NV OWF layouts as submitted to the MoD for review in July 2017 had been re-assessed and verified that the use of NAIZ mitigation would not be suitable for NV OWF. The applicant requested that the MoD provide further detail on this position. Dialogue is on-going between both parties and this has resulted in NV OWF submitting, on 23 December 2018, a formal proposal to the MoD for alternative means of mitigation.
14. The MoD formally confirmed its acceptance of the alternative mitigation proposal on 15 January 2019 and identified a revised version of requirement 13, put forward by the applicant in the draft DCO, to implement this. Both parties continue to engage on this to try and define mutually agreeable wording for this requirement.

## 2 STATEMENT OF COMMON GROUND

15. Within the sections and tables below, the different topics and areas of agreement and disagreement between the MoD and the Applicant are set out.

### 2.1 ES Chapter 16 – Aviation and Radar

16. The project has the potential to impact upon Aviation and Radar. Chapter 16 of the Norfolk Vanguard ES (document reference 6.1 of the Application) provides an assessment of the significance of these impacts.
17. Table 1 provides an overview of meetings and correspondence undertaken with DIO, on behalf of the MoD, regarding Aviation and Radar.
18. Table 2 provides areas of agreement (common ground) and disagreement regarding Aviation and Radar.

**Table 1 Summary of Consultation with MoD**

Date	Contact Type	Topic
<b>Pre-Application</b>		
4th June 2015	Outgoing information	Provision of turbine and boundary co-ordinates within East Anglia (North) to MoD.
25th August 2015	Outgoing information	Submission to MoD of East Anglia (North) Mitigation Modelling Report produced by SERCO.
8th March to 25th August 2016	Email correspondence	Numerous email correspondence with requests for information on the progress of the assessment by DIO (on behalf of MoD) of the SERCO Mitigation Modelling Report. Included request for expected date of response from DIO of their assessment results.
26th September 2016	Meeting	Meeting at DIO, Sutton Coldfield to discuss the SERCO East Anglia (North) Mitigation Modelling Report and the MoD's conclusion regarding its acceptability.
4th October 2016	Incoming email	Clarification by email from DIO of MoD position post-meeting and confirmation of agreement from MoD for the completion of assessment of development scenarios.
18th October 2016	Outgoing information	Submission to MoD of 'worst case scenario' drawings, coordinates and GIS Shapefiles for four test scenarios for DIO Modelling.
16th November 2016	Incoming email	Results of DIO Modelling of four test scenarios, which excluded an indicative turbine analysis, these were later supplied on the 28th November 2016. Analysis concluded that NV West is detectable to ADR Trimmingham at all four scenario heights; radar coverage over NV East varied.

Date	Contact Type	Topic
13th December 2016	Outgoing email	Request to DIO and subsequent reply by email from DIO stating that in DIO's opinion a meeting ahead of any required technical and operational assessment of a revised SERCO Report would be premature. As an alternative DIO requested that a revised layout be submitted to DIO for MoD comments.
7th July 2017	Outgoing email	Provision to DIO of NV layouts, co-ordinates and associated drawings for review.
28th November 2017	Outgoing email	Request for update from DIO as to when results might be expected of MoD analysis of the data supplied on the 7 July 2017.
11th December 2017	PEIR response	Reference to the impact of NV OWF, the MoD stated that all of the turbine development options being considered would have an unacceptable effect upon the operation of the Trimmingham ADR. As such, this impact will need to be addressed by an appropriate mitigation solution.
8th February 2018	Letter	Osprey letter to MoD requesting more information on suitable mitigation, including understanding whether a NAIZ around the NV wind turbines would effectively mitigate their effects in the airspace above and beyond the wind farm offshore areas. No response from MoD received.
<b>Post-Application</b>		
6 <sup>th</sup> August 2018	Outgoing email	Email requesting MoD to confirm whether there is any likelihood that the MoD will accept TPS-77 3-D NAIZs as a mitigation for NV OWF.
24th August 2018	Incoming email	Industry-wide statement from MoD expressing concerns over impact of wind turbines on TPS-77 ADR
31 <sup>st</sup> August 2018	Incoming email	Email from MOD advising that questions concerning NAIZ mitigation are being considered as part of the review and the alternative layout designs previously submitted are being reassessed.
14 September 2018	Incoming email	Email from MoD confirming that TPS-77 NAIZs would not be considered acceptable as mitigation and that an alternative mitigation solution may be required.
14 September 2018	Outgoing email	Email requesting further information from MoD on reasons behind unacceptability of NAIZs as mitigation.
4 <sup>th</sup> October 2018	Development Consent Order application response	MOD objection to the DCO application sent to the Planning Inspectorate. This identified that offshore elements of the project will need to be fitted aviation warning lighting; that the NV OWF will cause unacceptable interference to the Trimmingham ADR and that the proposed requirement 13 contained in the draft consent order cannot be agreed without agreement of an alternative mitigation proposal.



Date	Contact Type	Topic
6 <sup>th</sup> December 2018	Preliminary Meeting statement	MOD issues a statement to the Planning Inspectorate identifying its objection remains and the need to make provision to review this issue in the examination process.
23 <sup>rd</sup> December 2018	Outgoing email	Mitigation proposal formally submitted to MoD offering an alternative mitigation solution to TPS-77 NAIZ.
3 <sup>rd</sup> January 2019	Incoming email	Email from MoD confirming that mitigation proposal had been received and had been referred for assessment to confirm MoD departmental position.
15 <sup>th</sup> January 2019	Letter	MOD formally responds confirming acceptance of the alternative technical mitigation proposal submitted and offering wording for a requirement for inclusion in the draft DCO to implement this.

**Table 2 Aviation and Radar**

Topic	Norfolk Vanguard Limited Position	MOD position	Final position
<b>Consultation</b>			
Consultation	MoD has been adequately consulted regarding Aviation and Radar to date.	Agreed.	It is agreed by both parties that the consultation has been adequate.
<b>Environmental Impact Assessment</b>			
Existing Environment	The ES adequately characterises the baseline environment in terms of Aviation and Radar.	Agreed.	It is agreed by both parties that the ES adequately characterises the baseline environment in terms of Aviation and Radar.
Assessment methodology	Appropriate legislation, planning policy and guidance relevant to Aviation and Radar has been considered.	Agreed.	It is agreed by both parties that appropriate legislation, planning policy and guidance relevant to Aviation and Radar has been considered.
	The list of potential impacts on Aviation and Radar assessed is appropriate.	Agreed.	It is agreed by both parties that the potential impacts assessed are appropriate.
	The impact assessment methodology used is appropriate.	Agreed.	It is agreed by both parties that the impact assessment methodology used is appropriate.
	The worst case scenario used in the assessment for Aviation and Radar is appropriate.	Agreed.	It is agreed by both parties that the worst case scenario used in the assessment is appropriate.
Assessment findings	The characterisation of receptor sensitivity is appropriate.	Agreed.	It is agreed by both parties that the characterisation of receptor sensitivity is appropriate.
	The magnitude of effect is correctly identified.	Agreed.	It is agreed by both parties that magnitude of effect has been correctly identified.

Topic	Norfolk Vanguard Limited Position	MOD position	Final position
	The impact significance conclusions for Norfolk Vanguard alone are appropriate.	Agreed.	It is agreed by both parties that the impact significance conclusions for Norfolk Vanguard alone are appropriate.
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 considered within the CIA are appropriate.
	The assessment and conclusions of the CIA are appropriate.	Agreed.	It is agreed by both parties that the assessment and conclusions of the CIA are appropriate.
<b>Mitigation and Management</b>			
Mitigation and Management	Appropriate aids to aviation safety, including lighting and marking arrangements will be developed post-consent in consultation with the Defence Infrastructure Organisation Safeguarding in accordance with DML Condition 12.	MOD accredited aviation warning lighting will be required on relevant offshore structures during construction and post construction.	It is agreed by both parties that appropriate aviation lighting and marking arrangements will be developed post-consent in order that these can be implemented during the construction phase of the NV OWF.
	For the onshore element of the project, the cable route and associated infrastructure do not impact on MoD safeguarding zones.	Agreed.	It is agreed by both parties that the cable route and associated infrastructure of the onshore element of the project do not impact on MoD safeguarding zones.

Topic	Norfolk Vanguard Limited Position	MOD position	Final position
	No radar mitigation is required during construction of the NV OWF.	Technical mitigation to address the impacts of the OWF on the Trimmingham ADR will need to be implemented before the turbine blades of the OWF rotate.	The stage at which technical mitigation would need to be implemented has not been agreed and continues to be discussed between both parties
	The operational impact of the NV OWF on the Trimmingham ADR requires mitigation.	Technical mitigation to address the impacts of the OWF on the Trimmingham ADR will need to be implemented before the turbine blades of the OWF rotate.	The need for technical mitigation has been agreed.  The stage at which technical mitigation will need to be implemented has not been agreed and continues to be discussed between both parties.
	The parties are confident that an appropriate technical mitigation solution for impacts from the NV OWF on the Trimmingham ADR will come forward prior to the anticipated commissioning date for the NV OWF.	A technical mitigation proposal was submitted by NV OWF on 23 <sup>rd</sup> December 2018 and received by MoD. Referred for internal assessment. As a result the proposal was deemed acceptable for the purposes of defining a suitable	It is agreed by both parties that the technical mitigation solution proposed by NV OWF is technically feasible; and that it is reasonable to consider that this solution can be implemented.

Topic	Norfolk Vanguard Limited Position	MOD position	Final position
		requirement in the DCO.	
<b>Draft Development Consent Order (DCO)</b>			
Wording of Requirement(s)	<p>Requirement 12 of the draft DCO defines a requirement for the project to be lit and to provide details of offshore development to maintain defence aviation safety.</p> <p>NV OWF and MoD are currently in discussion over the wording of the proposed requirement for aviation warning lighting to be fitted to the offshore element of the development in accordance with MOD requirements.</p>	Under discussion	It is agreed by both parties that appropriate aviation lighting and marking arrangements will be developed post-consent in order that these can be implemented during the construction phase of the NV OWF. Once agreement is reached on the proposed requirement, the MOD will write to the Planning Inspectorate – National Infrastructure Directorate confirming that the MOD would be prepared to remove its objection to this application subject to the agreed requirement being imposed upon the consent.
	<p>Requirement 13 of the draft DCO is intended to secure a technical mitigation for the impacts on the Trimmingham ADR that must be put in place before the rotor blades on the wind turbines are allowed to turn on their horizontal axis .</p> <p>NV OWF and the MoD are currently in discussion over the wording of the proposed requirement relating to the provision of an air defence radar technical mitigation.</p>	Under discussion	It is agreed by both parties that a technical mitigation solution for impacts on the Trimmingham ADR must be put in place from the point at which the blades on erected wind turbine generators can turn on their horizontal axis. Should agreement be reached on the proposed requirement, the MOD will write to the Planning Inspectorate – National Infrastructure Directorate confirming that the MOD would be prepared to remove its objection to this application subject to the agreed requirement being imposed upon the consent.

The undersigned agree to the provisions within this SOCG

Signed	J. Wilson
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Position	Senior Safeguarding Officer, Defence Infrastructure Organisation Estates – Safeguarding
On behalf of	Ministry of Defence
Date	16/01/19

Signed	R Sherwood
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Position	Norfolk Vanguard Consents Manager
On behalf of	Norfolk Vanguard Ltd (the Applicant)
Date	16 January 2019