



MINISTRY OF DEFENCE

# Defence Infrastructure Organisation

Estates - Safeguarding Department

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Your ref: EN010079

DIO ref. 10040016

The Planning Inspectorate  
National Infrastructure Directorate  
Temple Quay House  
Temple Quay  
Bristol  
BS1 6PN

Dear Sir/Madam,

## **The Norfolk Vanguard Offshore Wind Farm**

### **Application for a Development Consent Order under Section 56 of the Planning Act 2008.**

I write to confirm the safeguarding position of the Ministry of Defence (MOD) in relation to the above application to construct and operate the Norfolk Vanguard Offshore wind farm.

This scheme will comprise of up to 200 wind turbines, up to 350m in height (to blade tip) that will be located in the North Sea in to two distinct development zones (Vanguard East and Vanguard West) the latter being situated approximately 47km east of the Norfolk- coast. In addition to the turbine structures there will be up to 2 offshore accommodation platforms, up to 2 offshore electrical platforms, up to 2 met masts, subsea cabling and other associated infrastructure. The onshore element of the project includes subterranean cabling as well as, electrical substations and other associated infrastructure to transfer the generated power from the Norfolk coast to connect with the National Grid to the west of Dereham.

In relation to the onshore element of the proposed development, the route identified for the installation of the cable will pass through MOD statutory height safeguarding zones surrounding the air defence radar at RAF Trimmingham and the aerodrome at RAF Marham passing through zones in which the MOD would need to consider developments 15.2 metres and 91.4 metres in height, respectively. The cables will be installed in subterranean ducts. Taking this into account in conjunction with the scale of the associated surface infrastructure, it is not anticipated that the onshore development will adversely affect MOD interests.

The MOD has assessed the location and layout of the offshore element of the development scheme proposed. The scheme outlined will not physically impact upon MOD offshore Danger and Exercise Areas or adversely affect defence maritime navigational interests. However, the turbines and some of the tall ancillary offshore structures will affect military low flying training activities conducted in this area. As such it will be necessary for these structures to be fitted with appropriate aviation warning lighting to maintain the safety of military air traffic.

In relation to the operation of defence radars, taking account of the location and scale of wind turbines that may be utilised, it has been determined that the proposed wind farm will be in line of sight and detectable to the air defence radar located at RAF Trimmingham.

Wind turbines have been shown to have detrimental effects on the operation of air defence radar. These include the desensitisation of the radar in the vicinity of wind turbines, and the creation of "false" aircraft returns. The

probability of the radar detecting aircraft flying over or in the locality of the turbines would be reduced, hence turbine proliferation within a specific locality can result in unacceptable degradation of the radar's operational integrity. This would reduce the RAF's ability to detect and manage aircraft in United Kingdom sovereign airspace, thereby preventing it from effectively performing its primary function of Air Defence of the United Kingdom.

Our assessments have determined that, when operational, the proposed wind farm will cause unacceptable and unmanageable interference to the effective operation of this air defence radar.

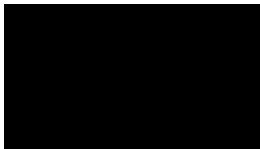
This issue has been recognised by the applicant. The MOD and the applicant's aviation consultants have been in dialogue to review possible alternative design scenarios or means of achieving a technical address of these impacts. The applicant submitted a technical mitigation concept for the MOD's consideration in 2015. Our subsequent assessment of this concluded that this would not be acceptable. To date, alternative wind farm layout designs and, or, an acceptable technical mitigation that would effectively overcome these issues has yet to be established and the MOD awaits further engagement from the applicant.

Therefore, at this stage, the MOD maintains a safeguarding objection to this application in its current form. The MOD notes that in the draft development consent order submitted in support of this application, the applicant has included requirement 13 which addresses Ministry of Defence surveillance operations. At present the MOD is unable to agree to such a requirement for the reasons given above.

The MOD continues to work with the applicant in reviewing possible means of addressing the issues identified above. I will write again to update our departmental position should an acceptable means of mitigating the impacts to air defence radar operations be identified.

I trust this clarifies our position on this consultation. Please do not hesitate to contact me should you wish to consider these points further.

Yours sincerely



Jon Wilson

Senior Safeguarding Officer