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The Planning Inspectorate
National Infrastructure Planning
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6th November 2018

Dear Examining Authority

**The Planning Act 2008 – Section 89 and The Infrastructure Planning
(Examination Procedure) Rules 2010 – Rule 8**

Thank you very much for the opportunity to provide further information to our representation submitted during the examination phase for the Hornsea Three consent application.

We note the following questions as detailed in The Planning Inspectorate's Letter dated 9th October 2018 following the Preliminary meeting:

Q1.5.1 Maritime and Coastguard Agency (MCA)

Section 18.2 of the Navigational Risk Assessment [APP-112] describes the collision risk modelling undertaken. The modelled vessel to vessel collision risk in the Hornsea Project Three array area is a major collision return period of 1 in 193 years. Following construction of the proposed array the risk would increase to 1 in 152 years. Paragraph 7.11.2.39 of the ES [APP-067] characterises this as a negligible effect.

Is the MCA in agreement with the approach to collision risk modelling and do you consider the outputs of the modelling to be realistic?

The MCA is content with the approach to the collision risk modelling undertaken as part of the Navigation Risk Assessment for Hornsea Three. We note the 21.4% increase in collision frequency compared to the pre-windfarm result. We further note the cumulative effect assessment which incorporates Hornsea Projects One, Two and Three giving a major collision return period increase of 9.72%, an increase of one in 116 years to one in 105 years.



HM Coastguard



INVESTORS
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This increase in risk is only tolerable with the appropriate risk mitigation as detailed in the Navigation Risk Assessment, and a layout of wind turbine generators (and other associated windfarm infrastructure) which is in accordance with our Marine Guidance Note (MGN) 543. The layout is of significant concern for MCA going forward, and the design principles have not yet been agreed by MCA. Although we support the establishment of the design principles, we should not be held to account should we not have considered every possible future eventuality based on the information provided within the current design principles.

Therefore, the MCA requests the option and ability to consider any layout plans on a case by case basis in line with MGN 543. This includes our strong recommendation that at least two lines of orientation are included within the layout design. This is not only for search and rescue purposes; multiple lines of orientation provide alternative options for vessel passage planning. We know that by far the safest way to navigate through a windfarm is when the turbines are in straight lines, with multiple lines of orientation, which gives a clear line of sight of entry and exit. If a master/skipper decides to go through a windfarm, they tend to place themselves equidistant between the turbines on either side, and this helps counter the environmental effects on handling, and this is compromised with a random turbine layout.

Q1.5.4 Maritime and Coastguard Agency (MCA)

The MCA [RR-060] considers that the 150m tolerance referred to in Principle 8 of the Layout Development Principles [APP-091] is excessive and would impede search and rescue (SAR) coverage.

What would the MCA regard as an acceptable tolerance?

The MCA request that turbines are constructed in straight lines, with a minimum of two lines of orientation, to maintain the safety of navigation and our search and rescue obligations. Access to windfarms by helicopter and vessels during an emergency situation, and by vessels should they decide to transit through a windfarm, is a complex process, especially in poor weather conditions, and therefore mitigations are required to ensure it is as safe and feasible as possible.

Standard search patterns are linear to allow for an effective coverage of an area, and wind turbines will degrade the search capability by restricting search spacing and increasing crew workload - therefore reducing search effectiveness. Within Principle 8, the developer may build turbines in an irregular layout anywhere within that 300m corridor, which would significantly impact the ability to search and/or rescue.

As a result, the MCA would be content with a tolerance of 50m with the understanding that the developer aims to construct turbines along the centreline and only deviating if conditions/seabed do not allow for a straight line.

Q1.5.5 Maritime and Coastguard Agency (MCA)

The MCA [RR-060] considers that, in the interests of SAR capability, an assessment should be made of the feasibility of providing a helicopter refuge area perpendicular to the turbine development corridors.

What would be the advantages and disadvantages of incorporating a helicopter refuge area as suggested by the MCA?

As raised in response to Q1.5.4 access into windfarms is complex, and the MCA must maintain the capability to deliver an effective SAR service anywhere within the UK Search and Rescue Region. A SAR lane which is of significant length (c10nm) is a concern as it limits the manoeuvring options for a helicopter whilst in the lane, e.g. when the aircraft can either climb out of, or transit to the end of the lane before making a turn and continuing its search. For a lane of 10nm, it would take 12 minutes before the helicopter could change track at ~50kts, which is a significant amount of time during an emergency situation. For Hornsea Three, at least one of the proposed lanes was in excess of 20nm.

Generally, helicopters also have to enter a windfarm from low level and along a SAR lane, rather than dropping down from above, particularly through cloud, and a helicopter refuge area serves a number of key purposes;

- 1) it can allow additional routes into a windfarm improving the access options;
- 2) it allows for an area in which the helicopter can turn along a search leg, so an aircraft doesn't necessarily have to climb out and go back to the start of the next lane; and
- 3) it also allows for a 'safe' area for an aircraft to re-familiarise with the surroundings, re-orientate their position within the windfarm or during an aircraft emergency. This is a fundamental requirement when windfarms are over c10nm and is particularly important when there is less than two lines of orientation.

Are there examples of offshore windfarms with turbine development corridors of a length comparable to this proposal?

There is nothing currently constructed of this scale that has required a refuge area. However as more developments are constructed, refuge areas will continue to be requested where the lanes are sizeable, and they are assessed as being required by SAR and navigation safety specialists.

If there are, what approach was taken to maintaining SAR capability in those examples?

See above.

The MCA would also like to take this opportunity to respond to two further questions seen in The Examining Authority's Written Questions and Requests for Information, where we believe it is necessary for MCA to reply in addition to the applicant:

Q1.13.66 Applicant

Condition 11(1)(a) states that the approval of the MMO shall not be required where the proposed design is in accordance with the design principles. The MMO [RR-085] objects to that approach.

Please comment on the MMO's objection to this aspect of the condition.

The MCA agrees entirely with the MMO's objection to this aspect of the condition. We cannot rely solely on the design principles to deliver an acceptable layout in accordance with MGN 543. The design principles are a tool for the applicant, the layout must still be approved by the MCA, Trinity House and the MMO despite following the design principles.

Q1.13.67 Applicant

Condition 11(1)(a)(v) provides for the indicative layout of the WTGs to be approved.

Why would the layout only be indicative? At what stage (if any) would the MMO approve the actual layout?

The actual layout should be approved by the MMO once the MCA and Trinity House have confirmed that they accept the layout in accordance with MGN 543.

Yours faithfully,

Helen Croxson
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Navigation Safety Branch

Peter Lowson
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HM Coastguard, MCA