

**From:** [Helen Croxson](#)  
**To:** [Hornsea Project Three](#)  
**Cc:** [Peter Lowson](#)  
**Subject:** Re: HORNSEA PROJECT THREE OFFSHORE WIND FARM (EN010080)  
**Date:** 15 January 2019 15:32:18  
**Attachments:** [image003.png](#)  
[Hornsea 3 Letter Response to ExA.pdf](#)

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Dear Project Team,

Please find attached response from MCA regarding the Examining Authority's (ExA's) further written questions and requests for information issued on 19 December 2018.

Kind regards

Helen



**Maritime &  
Coastguard  
Agency**

**Helen Croxson, Offshore Renewables Advisor**  
Navigation Safety Branch, Bay 2/25  
Maritime & Coastguard Agency  
Spring Place, 105 Commercial Road, Southampton, SO15  
1EG  
Tel: 0203 8172426  
Mobile: [REDACTED]  
Email: [Helen.Croxson@mcga.gov.uk](mailto:Helen.Croxson@mcga.gov.uk)

Please note I currently work Tuesdays, Wednesdays and Thursdays.

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Maritime &  
Coastguard  
Agency

The Hornsea Three OWF Team  
National Infrastructure Planning  
The Planning Inspectorate  
Temple Quay House  
2 The Square  
Bristol  
BS1 6PN

Bay 2/25  
Spring Place  
105 Commercial Road  
Southampton  
SO15 1EG  
UK

Tel: +44 (0)20 3817 2426

Fax:

E-mail: [Helen.Croxson@mcga.gov.uk](mailto:Helen.Croxson@mcga.gov.uk)

Your ref: 20010612

Our ref: Hornsea 3 Offshore Windfarm  
Project (EN010080-001331)

15 January 2019

Dear Sir/Madam

## **Application for an Order granting Development Consent for the proposed Hornsea Project Three Offshore Wind Farm**

### **The Examining Authority's Further Written Questions and Requests for Information Issued on 19 December 2018**

The MCA's remit for offshore renewable energy development is to ensure that safety of navigation is preserved, and our search and rescue capability is maintained, whilst progress is made towards government targets for renewable energy. This includes our obligations under The United Nations Convention on the Law of the Sea.

In response to the Examining Authority's (ExA's) Further Written Questions and Requests for Information, the MCA would like to comment as follows:

#### **5. Navigation and other offshore impacts**

Q2.5.1 Applicant, Maritime and Coastguard Agency (MCA)

*The Applicant [REP2-005] and the MCA [REP3-084] disagree as to whether the Design Principles should require at least two lines of orientation. Please explain why you come to different conclusions on this matter. Are there examples of comparable OWFs which do not have at least two lines of orientation? If so, what is the typical spacing of Wind Turbine Generators (WTG) in those examples?*

MCA currently requires as per MGN 543 a minimum of two lines of orientation unless a suitable safety case can be demonstrated to justify one line of orientation. The applicant has therefore incorporated just one line of orientation as the worst-case baseline for assessment in the NRA.



HM Coastguard

However, where it is possible for a developer to incorporate two lines of orientation, it is our strong preference that they do so, despite any views on potential low levels of traffic in the area.

The necessity for at least two lines of orientation is not only for search and rescue helicopter 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. Vessels may transit a windfarm through choice or they may unexpectedly find themselves in the vicinity of the offshore windfarm in poor conditions or in an evolving emergency situation, and two lines of orientation would make navigation through the windfarm much safer.

Although there are some examples of existing offshore windfarms which do have just one line of orientation, we made it clear at the time that these were certainly not desirable. They were also approved on a case by case basis, considering the cumulative impact and well as many other factors at the time. As our experience in this field has evolved, and as more applications for new developments are being received, there is a clear need to adapt to ensure that, as our seas become increasingly busy with sea space competition, particularly as we enter Round 4 of the Crown Estate's new leasing opportunities, the safety of navigation is preserved for shipping, recreation, and fishing. Ensuring multiple lines of orientation as we go forward will significantly contribute to safety and this approach has been discussed and supported by our key stakeholders at the UK's Safety of Navigation Committee (UKSON) comprising a wide range of experts in the marine environment.

#### **Q2.5.6 MCA**

*The Applicant's Appendix 11 (to Deadline 2 submissions) SAR Technical Note [REP2-022] suggests that your analysis of the searchable area is overly pessimistic due to the various navigational systems that the SAR helicopters are fitted with. Your submission for Deadline 3 [REP3-084] states that a wider spacing would not affect the area impeded by the development lane. Given the typical spacing between WTG referred to at ISH1, would it be possible for SAR helicopters to operate within a development lane? What is your response to the Applicant's point that the navigational systems fitted to SAR helicopters would enable safe operation within the array?*

The proposed development lanes could have turbines placed at irregular intervals and as such, it can't be guaranteed whether a SAR helicopter could operate within one. The minimum spacing to allow an aircraft to enter, in reduced visibility, is 500m which is greater than the spacing of the development lane. Depending on the weather conditions and the overall layout of the windfarm, it may be possible for a SAR aircraft to fly through areas of the development lane. However, this could not be guaranteed, particularly in poorer visibility.

As discussed in our previous submission, the navigation systems within SAR helicopters all assist the crew to enable them to operate in hostile environments. However, any SAR helicopter operation within an array has associated dangers, particularly in reduced visibility and/or poorer conditions. We see this question in two ways though. The SAR lanes within the array should allow a SAR helicopter access

in most weather conditions. This would be using a mixture of visual identifiers as well as navigational systems. The crew would be prepared for system failures and have preferred escape routes. The second element is concerned with the development lane and restrictions on searching. The navigational systems on the SAR helicopter are only limited use in these circumstances. Using the camera to search along the development lane may be possible but would be time consuming and not effective in moisture

#### **Q2.5.7 MCA**

*The Applicant's Appendix 11 (to Deadline 2 submissions) SAR Technical Note [REP2-022] states that in an emergency a SAR helicopter could climb out of the array within 2.5nm. Consequently it is said that any refuge would need to be relatively close to the location of an emergency to be of any assistance. What is your response to this comment?*

We do not completely agree with this statement. A refuge area is not all about an escape route though it does form an important part of the justification. While uncommon, aircraft failures are always discussed by the crew and plans determined before conducting any flight. This was no different when entering a windfarm. Failures can be wide ranging in type and consequence, but the main ones considered were engine, GPS or radar failure, or a combination. Each crew may have differing plans, but the exercises showed that while climbing may be a suitable option, the preference would be to follow a SAR lane out of the windfarm. The SAR lane is known to have no fixed obstructions and may present less risk than climbing vertically (with engine, GPS or radar failure) out of the lane given the aircraft will be in a relatively stable condition. It was only when multiple failures were considered e.g. GPS and radar, that a vertical climb may be preferred. When SAR lanes are long, a refuge area may provide a quicker option for an aircraft to get to safe airspace in the event of a technical failure

#### **End of response to questions.**

In addition, the MCA would like to comment on the Draft Development Consent Order as a separate submission, in particular to ensure that the navigation safety related conditions of consent are fit for purpose, and to raise our concerns regarding the proposed process for arbitration for the Hornsea Three Offshore Windfarm.

Yours faithfully,

Helen Croxson  
OREI Advisor  
Maritime and Coastguard Agency