



Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

The Applicant's Response to the Maritime and
Coastguard Agency's Deadline 3 Submission

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1 The Applicant's Response to the Maritime and Coastguard Agency's Deadline 3 Submissions

1. This document presents the Applicant's response to the Maritime and Coastguard Agency's (MCA) '*Comments on Applicant's submission at Deadline 2 in response to MCA's submissions at Deadline 1*' Deadline 3 submission [REP3-134].

Table 1 The Applicant's Response to the Maritime and Coastguard Agency's Deadline 3 Submissions

ID	MCA's Written Representation	Applicant comments	MCA response	Applicant's response																				
1.1	<p>The NRA and Shipping and Navigation Chapter recognises the baseline collision rate is high (1 in 9.6 years) due to the current high volume of traffic, shallow banks and neighbouring offshore wind farms. The assessment concludes that collision risk rises to 1 in 8.5 years assuming no increase in traffic volume, or 1 in 7 years with 10% increase in traffic, or 1 in 6 years with 20% increase in traffic. It is recognised that the traffic volume between the sites will increase as a result of cumulative effects of other consented wind farms.</p> <p>The navigable sea room between the existing Sheringham Shoal and Dudgeon wind farms is currently 8.2NM wide.</p>	<p>The NRA [APP-198] included modelling of the scenario where traffic increases but the SEP&DEP are not present. The results showed the majority of the change in the former (i.e., with SEP&DEP) was associated with the traffic increase as opposed to the introduction of the SEP&DEP. The Applicant notes that the 10% and 20% values referenced by the MCA are inclusive of the effects of increased traffic and the SEP&DEP, however these values are not significantly different from the scenario where SEP&DEP are not present (see table below).</p> <p>The NRA [APP-198] included application of the MCA methodology for corridor width calculation, with the strict interpretation of the width requirements being found to be met. Further details are provided in Section 18.4 of the NRA [APP-198]. The Applicant is in the process of undertaking further assessment of traffic utilising the corridor and will provide any relevant results as part of a future submission.</p> <p>Return periods for vessel being involved in a collision based on NRA modelling:</p> <table border="1" data-bbox="465 1145 1055 1241"> <thead> <tr> <th>Scenario</th> <th>Without SEP&DEP</th> <th>With SEP&DEP</th> </tr> </thead> <tbody> <tr> <td>Base Case (0% traffic increase)</td> <td>1 in 9.6 years</td> <td>1 in 8.5 years</td> </tr> <tr> <td>10% traffic increase</td> <td>1 in 7.9 years</td> <td>1 in 7.0 years</td> </tr> <tr> <td>20% traffic increase</td> <td>1 in 6.7 years</td> <td>1 in 5.9 years</td> </tr> </tbody> </table>	Scenario	Without SEP&DEP	With SEP&DEP	Base Case (0% traffic increase)	1 in 9.6 years	1 in 8.5 years	10% traffic increase	1 in 7.9 years	1 in 7.0 years	20% traffic increase	1 in 6.7 years	1 in 5.9 years	<p>The MCA does not agree that the change in collision risk is not associated with the SEP&DEP. The applicant states that the values in the table 'are not significantly different', however the change in risk ranges from 11.4% to 11.9% which we would not consider insignificant.</p> <table border="1" data-bbox="1093 603 1659 738"> <thead> <tr> <th>Scenario</th> <th>Change in collision risk</th> </tr> </thead> <tbody> <tr> <td>Base Case (0% traffic increase)</td> <td>11.5%</td> </tr> <tr> <td>10% traffic increase</td> <td>11.4%</td> </tr> <tr> <td>20% traffic increase</td> <td>11.9%</td> </tr> </tbody> </table> <p>The corridor guidance in MGN654 is to be used as advice for determining safe distances between wind farms boundaries and shipping routes and assessment is on a case-by-case basis. Factors that should be considered, in addition to the 20-degree model, are described in Section 4.7 in MGN654. It is important to recognise that the corridor guidance and shipping route template are not prescriptive tools but need intelligent application.</p>	Scenario	Change in collision risk	Base Case (0% traffic increase)	11.5%	10% traffic increase	11.4%	20% traffic increase	11.9%	<p>The Applicant notes that the Navigation Risk Assessment (NRA) [APP-198] makes clear that collision risk is already high in the area, and that there will be an associated increase in collision risk (as there would be in any instance where vessels are displaced). The statements of change between the with and without DEP&SEP scenarios previously made do not claim that there is no change, but that the material effect on expected number of collisions does not change. This is set out in further detail in Section 7 of the Applicant's Navigational Safety Technical Note [REP3-031] submitted for Deadline 3.</p> <p>The Applicant agrees that the corridor guidance and shipping route template are not prescriptive tools but need intelligent application.</p>
Scenario	Without SEP&DEP	With SEP&DEP																						
Base Case (0% traffic increase)	1 in 9.6 years	1 in 8.5 years																						
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	<p>Commercial vessels will typically ensure a safety buffer of at least 1NM between their course and an offshore wind farm boundary and the traffic study shows this is 1.5NM. 90% of this traffic transits in a 'corridor' 5.5NM wide and the introduction of the two extension projects will reduce this corridor to 3.6NM of sea room; a reduction of sea room of 34%.</p>			
1.3	<p>In Fig 18.1 of the NRA the 20% corridor guidance from MGN 654 has been used to show the minimum width required for the 11.2NM long corridor between the extensions should be at least 4.1NM. The boundaries at the narrowest point are 5.6NM apart, however it is noted that shallow banks marked by the East Dudgeon buoy potentially extend the</p>	<p>The NRA [APP-198] included application of the MCA methodology for corridor width calculation set out in MGN 654, with the strict interpretation of the width requirements being found to be met. In line with the MGN 654 wording, the calculation was based on the area "where turbines appear along both sides of a shipping corridor". It is acknowledged that strict application of the calculation does not account for the presence of the local shallow banks, and text on this basis was included in Section 18.4 of the NRA [APP-198].</p>	<p>The corridor guidance in MGN654 is to be used for determining safe distances between wind farms boundaries and shipping routes on a case-by-case basis. Factors that should be considered, in addition to the 20-degree model, are described in Section 4.7 in MGN654. It is important to recognise that the corridor guidance and shipping route template are not prescriptive tools but need intelligent application.</p>	<p>As per the latest Draft Statement of Common Ground Maritime and Coastguard Agency [REP3-079], the Applicant and MCA are now in agreement on the corridor width between SEP and DEP (i.e., where bounded on both sides by turbines).</p>

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	<p>corridor length a further 6.5NM to the northwest since there is no safe sea room to the west of a line between the East Dudgeon buoy and the northern corner of the Sheringham Shoal Extension boundary. As such, is it arguable the length of the corridor would be 17.2NM and the required width as per the guidance in MGN 654 should be at least 6.25NM.</p>			
1.4	<p>Annex F of the NRA (Hazard Log) does not include a hazard for assessing collision risk between two third party vessels as a result of reduced sea space. Collision risk is mentioned in Hazard ID C1, C2, C7 and C8 (Displacement from wind farm sites resulting in increased collision risk) for the construction and operational phases,</p>	<p>Annex F [NRA APP-198] Row C1 includes consideration of both displacement and resultant collision risk. The realistic most likely consequences of displacement are negligible with no perceptible navigational safety impact but with a high frequency of occurrence given the mostly likely consequences of a vessel being displaced is an encounter which does not lead to a collision event. The realistic worst case consequences of displacement is that the encounter then leads to a collision event and is appropriately ranked that whilst low frequency is of serious consequence i.e., could lead to serious injury, fatality, or critical impact damage. Even if the hazard log impact was to solely consider collision risk in isolation (which cannot be directly caused by the wind farm</p>	<p>It is understood that the Row C1 scoring focuses on displacement since the consequences of a collision would never be considered 'negligible', and as such, Row C1 can't provide scoring for both displacement and collisions. MCA does not agree that collision risk in isolation cannot be directly caused by the wind farm since it is the reduction of sea space that is causing vessels to be 'squeezed into a new location' and causing collision risk to increase.</p>	<p>As per the latest Draft Statement of Common Ground Maritime and Coastguard Agency [REP3-079], the Applicant and MCA are now in general agreement in relation to hazard identification and ranking with the exception of hazards associated with the north-western extent of DEP North.</p>

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	<p>however there is a focus on deviation and commercial concerns. For instance, the most likely consequences of these hazards were assessed with a score of 1 - Negligible (no perceptible impact) which is not a realistic consequence of a collision between two third-party vessels. The likelihood of a worst-case consequence of a collision between two third-party vessels was assessed with a score of 1 (no perceptible impact) which appears to be an underestimation of the likely outcomes.</p>	<p>i.e., the vessels have to be displaced or squeezed into a new location) the most likely consequences based on real time accident statistics shown in section 13.4 is that the collision would be low frequency and lower consequence.</p> <p>The hazard log is a key input into the Formal Safety Assessment process and uniquely provides opportunity for local and national stakeholders to agree rankings, The hazard workshop took place on the 10th August 2021, a draft hazard log was provided to attendees for comment on the 9th November 2021, and a final version was then sent to attendees on the 19th November 2021.</p>		
1.5	<p>Collision risk is discussed in section 21.1.3.1 of the NRA, however it is not understood how the future collision risks have been predicted using the hazard log scores. The predicted increase of 13%</p>	<p>Multiple inputs are used to inform the Formal Safety Assessment around which the NRA is developed. This is detailed in Section 3.1 of the NRA [APP-198] and includes both the modelling outputs and the consultation input including the hazard workshop.</p> <p>The NRA including outputs of the modelling shows that collision risk is already high in the area as demonstrated by the pre wind farm modelling</p>	<p>It is agreed that collision risk is already high in the area and even with COLREGS accidents and incidents still occur. The introduction of SEP&DEP increases collision and allision risks even further.</p>	<p>As set out in Section 2 of the Applicant's Navigational Safety Technical Note [REP3-031] submitted for Deadline 3, the NRA [APP-198] process found all hazards to be within ALARP parameters under the FSA.</p>

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	collision frequency at current traffic levels may have been underestimated, in which case changes to the red line boundaries must be considered.	scenarios (see response in ID 1.1). However, when looking at accident and incident statistics, the risks are managed by mitigations already in place including the International Regulation for the Prevention of Collisions at Sea (COLREGS).		
2.2	Promulgation of project vessel procedures in a Navigation Management Plan to regular operators is noted as a mitigation of displacement, however not all transiting vessels will have this promulgated to them. As a risk control for reducing the impact of displacement and for preventing collisions between two third party vessels the NMP is not an effective mitigation measure. Although not specifically worded for a risk of collision between two third party vessels, Hazard C1 does refer to this situation and the NMP is not listed as a further mitigation measure between third party	It is not the intention of the NMP to control encounter events and the possibility of collisions given that COLREGS is already in place to manage these interactions. See response in ID1.1 for further detail on changes in collision risk.	Section 21.1.3.1 of the NRA which refers to Third Party collision refers to the Navigation Management Plan in paragraph 439 as 'reducing the frequency of any displacement and deviation the impact is considered to be tolerable with additional mitigation and ALARP'. Section 13.5.1.4 of Chapter 13 Shipping & Navigation (Environmental Statement) refers increased collision risk between third party vessels and paragraph 109 states that a Navigational Management Plan will be developed as mitigation.	Interactions between project vessels and third party traffic will be managed via COLREGs. The Navigation Management Plan was a specific mitigation proposed to mitigate the concerns raised by regular users of the area. The Navigation Management Plan is secured via Condition 13 of the Deemed Marine Licence 1 and 2 and Condition 12 of the Deemed Marine Licence 3 and 4 (see the draft Development Consent Order (Revision G) [document reference 3.1]).

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	vessels. This implies that there has been no additional mitigation outside of the embedded mitigations to address the predicted large increase in the frequency of encounter.			
			In addition, the Applicant's comments on MCA's response to the first Examiners' Questions Q1.19.1.6 regarding the Navigation Management Plan, the Applicant again commented that "It is not the intention of the NMP to control encounter events and the possibility of collisions given that COLREGS is already in place to manage these interactions". I refer to the statements within the NRA and ES Chapter 13 as highlighted above that refers to the NMP reducing third party vessel collision risk.	