

EN010080 - Hornsea Project Three – The Examining Authority’s Written Questions and Requests for Information  
 Issued on 9<sup>th</sup> October 2018 submission at Deadline 1.

Ref	Question	MMOs position
	<b>Benthic</b>	
Q1.2.6	Table 2.38 of the ES [APP-062] states that the introduction of hard substrates associated with foundations, scour protection and cable protection would only lead to a minor adverse impact. Do you agree that there are unlikely to be significant changes in the composition of epifaunal and infaunal communities as a result of the introduction of hard substrates?	Based on the evidence provided, the MMO is in agreement that the introduction of hard substrate would lead to minor adverse impact and that there is likely to be no significant changes to the faunal communities as a result.
Q1.2.8	Table 2.38 of the ES [APP-062] states that the risk of spreading invasive and non-native species is minor adverse to negligible. Do you agree with this assessment of the risk to benthic communities from invasive and non-native species?	Based on the available information the MMO agree that the risk of spreading invasive and non-native species is minor adverse to negligible.
Q1.2.13	Representations from NE [RR-097], the MMO [RR-085] and the EIFCA [RR-070] suggest that there is a need for additional survey data to be collected for the nearshore cable corridor re-route. Please explain why historical data are insufficient and state what, in your view, would be required to provide an adequate baseline.	In our RR submitted to PINS on 20 July 18, the MMO raised a number of concerns regarding the limited availability of survey data for the inshore cable corridor reroute. Since then, the applicant has provided the Wash and North Norfolk Coast SAC clarification note to the MMO on 9 October 18, which outlines further survey work and data analysis for the cable reroute. Following review of the clarification note, the MMO is able to confirm that a drop down video survey has been undertaken and the predictions made by the applicant regarding the sediments, habitats and the recovery of the sediments are in line with what was assessed in the ES. Furthermore, it can be confirmed that no biogenic or geogenic reefs have been observed. The information provided give the MMO confidence in the predictions by the applicant in the ES. Although no new geophysical data has been collected within the reroute area of the nearshore export cable corridor, the data that has been collated provides sufficient information for the baseline environment for the purpose of informing the EIA
Q1.2.20	Paragraph 2.7.1.19 of the ES [APP-062] states that Sabellaria reefs are ‘likely to be ephemeral’. What peer reviewed literature supports this assumption? Is it possible that the observed changes in distribution are attributable to regular loss of reefs from bottom trawling? Given the observed ephemerality, would pre-construction surveys be effective in mitigating potential impacts? Please could NE and the MMO comment on whether they agree that the reefs are likely to be ephemeral and whether it is reasonable to consider them as having medium recoverability.	Research undertaken at the North Norfolk Sandbanks and Saturn Reef SAC (e.g. Limpenny <i>et al.</i> , 2010, Jenkins <i>et al.</i> , 2018) show that mature <i>Sabellaria</i> reef identified by Conoco Phillips in 2003, known as Saturn Reef, was not observed in subsequent surveys. Reef was observed in other areas within the SAC in 2013, although not as well developed as that observed in 2003. Reef rubble was observed in the Saturn Reef area by both Limpenny and Jenkins, but it was never determined whether the cause of the damage was due to natural (storms) or anthropogenic (trawling) impacts. Until an investigation of trawling location and intensity has been undertaken within

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		<p>the SAC, it is still speculation that trawling is the sole cause of the damage to <i>Sabellaria</i> reef.</p> <p>Pre-construction surveys (if undertaken temporally (within months) near to construction start dates) combined with micro-siting around reef areas should be effective for mitigating potential impacts. If the construction is to be undertaken in two phases, further surveys may need to be undertaken in areas of potential reef to ensure no reef has formed in the interim period. The MMO is in agreement that reefs tend to be ephemeral in areas of high sediment mobility and that they will have medium recoverability.</p> <p>References:                  Limpenny, D.S., Foster-Smith, R.L., Edwards, T.M., Hendrick, V.J., Diesing, M., Eggleton, J.D., Meadows, W.J., Crutchfield, Z., Pfeifer, S., and Reach, I.S. 2010. Best methods for identifying and evaluating <i>Sabellaria spinulosa</i> and cobble reef. Aggregate Levy Sustainability Fund Project</p> <p>Jenkins, C., Eggleton, J. D., Barry, J., O’Connor, J. (2018) Advances in assessing <i>Sabellaria spinulosa</i> reefs for ongoing monitoring. Ecology and Evolution 8 (2)</p>
Q1.2.32	<p>Paragraph 2.12.2.3 of the ES [APP-062] identifies a number of impacts that have been scoped out of the cumulative impact assessment.</p> <p>Do you agree with the decision not to assess certain impacts on benthic ecology receptors within this assessment or within the HRA in-combination assessment for the North Norfolk Sandbanks and Saturn Reef Special Area of Conservation?                  If not, why not?</p>	<p>The risk of spreading invasive and non-native species was determined as minor adverse to negligible. The MMO would not therefore exclude this from assessment of the cumulative effects, as there is potential for any invasive species colonising Hornsea Three to impact (act as a stepping stone) from Hornsea Two and One offshore wind farm projects and vice versa.</p> <p>The MMO agree that the remaining impacts would be local to Hornsea Three and should not be considered within cumulative effects.</p>
	<b>Ornithology</b>	
Q1.2.38	<p>Representations from NE [RR-097], RSPB [RR-113] and the MMO [RR-085] consider that an appropriate site specific baseline has not been established. Why do you consider that two years of survey data is essential to provide an appropriate baseline?                  Given the potential for the variability in the number and distribution seabirds, what increased confidence would be provided by an additional 8 months of data?</p>	<p>The MMO defers to NE as the statutory nature conservation body and experts in ornithology. However, the requirement for 2 years of ornithological monitoring data to inform wind farm applications is a standard approach undertaken by all wind farms. By only including 18 months of data some important periods are only surveyed once and therefore the results may not be representative of the overall use of the site.</p>
	<b>HRA</b>	

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Q1.2.101	<p>Paragraph 5.6.2.35 of the Report to Inform Appropriate Assessment [APP-051] states that the North Norfolk Sandbanks and Saturn Reef SAC sandbanks are dynamic and mobile and are therefore considered to have moderate levels of recoverability.                  Do you agree with this assessment of the recoverability of the SAC sandbank feature?                  Please refer to any peer reviewed evidence that may be available in support of your response.</p>	<p>The literature states that, although the sandbanks are dynamic and sediments are highly mobile, they are thought to be progressively, although very slowly, elongating in a north-easterly direction (Cooper <i>et al</i> 2008). Therefore, the MMO is in agreement that they will have moderate levels of recovery.</p> <p>Reference:                  Cooper, W. S., Townsend, I. H. &amp; Balson, P. S. 2008. A synthesis of current knowledge on the genesis of the Great Yarmouth and Norfolk Bank Systems. The Crown Estate, London, 69 pp.</p>
Q1.2.114	<p>Conditions 11(4) and 11(5) of the Generation Assets DML and 12(4) and 12(5) of the Transmission Assets DML [APP-027] seek to mitigate potential effects on marine mammals from piling operations.                  what extent do you consider that this would be an effective approach?</p>	<p>The MMO is content with the list of mitigation measures as outlined under condition 11(5) and 12(5). Furthermore, the MMO consider that conditions 11(4) and 12(4) would be an effective approach to mitigate potential effects on marine mammals as long as they are followed in conjunction with the approval of a Marine Mammal Mitigation Protocol and the Site integrity Plan.</p> <p>Discussions with the applicant have continued to inform a Statement of Common Ground between the Applicant and the MMO and the inclusion of a condition to set out the requirement for the submission of a Site Integrity Plan has been agreed. This should be included in the updated draft DCO.</p>
<b>Historic Environment</b>		
Q1.8.15	<p>The applicant has provided an Outline Written Scheme of Investigation (OWSI) [APP-115] in relation to marine archaeology.                  Are you in agreement with the OWSI?                  If not, what amendments would you suggest?</p>	<p>The MMO defers to Historic England’s position.</p>
Q1.8.16	<p>Section 9.11.1 of the ES [APP-069] sets out an assessment of significance for the effects of the construction phase on marine archaeology. The magnitude of impacts is assessed as being negligible.                  Whilst impacts are predicted to be localised, given the total maximum area of proposed disturbance, what confidence is there that the magnitude of impacts would remain as being negligible?                  Do the MMO and HE agree with the applicant’s assessment of magnitude of impact on marine archaeology?</p>	<p>The MMO defers to Historic England’s position.</p>

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<b>Content of the DCO - General</b>		
Q1.13.1	The Applicant’s additional submission [AS-003] sets out the relationship between the design parameters in the dDCO [APP-027] and those in the ES. Does this submission address your concerns regarding the relationship between the areas and volumes of material set out in the ES and those referred to in the dDCO?	The MMO has reviewed this additional submission and has outstanding queries regarding the design parameters in the DCO and the ES. A detailed description of our outstanding queries can be reviewed in our Written Representation (Point 4.3 and 4.4). The queries raised are in relation to disposal volumes and cable protection.
Q1.13.16	Article 5(7) provides that, where the benefit of the order is transferred, no obligations remain with the undertaker. The MMO [RR-085] advises that DML conditions should remain effective against the undertaker should any assets be transferred. Would Article 5(7) provide adequate protection for the marine environment in the event that a transferee failed to carry out its obligations under the DML? Please can the MMO comment on the statement in the Explanatory Memorandum [APP-028] to the effect that this approach has been followed in the East Anglia Three Offshore Windfarm Order 2017.	The MMO is content that precedent for transfer of benefit would follow the procedures outlined by the Applicant in the approach taken for the East Anglia Three Offshore Windfarm Order 2017.
<b>Schedule 11 – Deemed Marine License (generation assets)</b>		
Q1.13.71	Would it be appropriate, in the interests of mitigating impacts on benthic ecology, to include a condition limiting the footprint of foundations and scour protection for each type of foundation contemplated in the application? If so, should there be different limits for the differing sizes of WTG which are proposed?	The MMO would welcome the inclusion of a condition to limit the maximum footprint of foundations and scour protection. The MMO consider that this would be in line with best practise and would provide further clarity to record the parameters of the worst case scenario within the DMLs.  The MMO would be content if the maximum footprint of foundation and scour protection would be recorded for the worst case scenario only.
Q1.13.72	The MMO [RR-085] has suggested that the volume and footprint of sandwave clearance and the amount of boulder clearance should be limited by a condition. Please can the Applicant comment on this suggestion. Please can the MMO comment on what measure(s) should be used in relation to the amount of boulder clearance.	Volume and footprint of sandwave clearance and the amount of boulder clearance should be provided in cubic metres (m <sup>3</sup> ) and square metres (m <sup>2</sup> ) respectively.
Q1.13.73	Paragraph 4.11.1.33 of the ES [APP-064] considers maximum hammer energy for piling operations. The MMO [RR-085] recommends that a condition is included to restrict the maximum hammer energy to the worst case scenario (5,000kJ), as	The MMO recommends the inclusion of a condition to restrict the maximum hammer energy to 5000kJ. The use of 5000kJ was assessed as the worst case scenario within the ES, the MMO is therefore content that there is no requirement for such a restriction to vary according the foundation type.

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	<p>assessed in the ES. However, that maximum relates to a WTG type which may not be used. There is an example (Dogger Bank Teesside A and B) of imposing limits relevant to the various foundation types under consideration.</p> <p>Would it be appropriate to include a condition restricting maximum hammer energy?</p> <p>If so, should any such restriction vary according to the foundation type being used?</p>	<p>Furthermore, the MMO would like to highlight that this recommendation has been discussed with the applicant who agreed to include the condition as suggested by the MMO in the revised draft DCO. Please see the agreed condition wording below.</p> <p><i>In the event that driven or part-driven pile foundations are proposed to be used, the hammer energy used to drive or part-drive the pile foundations must not exceed 5,000kJ.</i></p>
Q1.13.74	<p>The MMO suggests that pre and post-construction surveys and monitoring should extend to benthic communities [RR-085]. Paragraph 2.11.1.14 of the ES [APP-062] addresses sandwave recovery but not the recoverability of benthic communities in any significant detail.</p> <p>Would it be appropriate to include a condition requiring the ‘in-principle monitoring plan’ to include pre and post-construction surveys and monitoring for benthic communities and geophysical features?</p>	<p>The MMO recommends the inclusion of a condition including the requirement to undertake pre- and post-construction surveys and monitoring for benthic communities and geophysical features.</p> <p>The MMO has commented on this in point 4.3 of our Relevant Representation. The MMO has provided further comment on this in our Written Representation, please see comment 6.5 for further information.</p>
	<b>General</b>	
Q1.15.4	<p>The MMO [RR-085] states that the assessment of significance of effect in the ES has not been undertaken in line with the Rochdale envelope approach in that the maximum potential effect has not been identified.</p> <p>Please provide specific examples where, in your view, the ES assessments are not in line with the Rochdale envelope approach.</p>	<p>It was not clear to the MMO how the applicant was able to conclude a ‘minor’ impact in situations where the assessment indicated that the significance of effect may be ‘minor to moderate’. According to the Rochdale Envelope approach, such effects should have been assessed as of ‘moderate’ significance. Following discussions with the applicant, further clarification was provided to the MMO which indicated that in situations where the conclusion was ‘minor to moderate’ expert judgement was used to make the final determination whether it would be ‘minor’ or ‘moderate’. This has been made explicit in the ES at appropriate points where expert judgement has been used.</p> <p>The MMO is content with this approach.</p>
Q1.15.14	<p>Please comment on the Outline Fisheries Coexistence and Liaison Plan [APP-183] and suggest any potential amendments that may, in your view, be required in order to secure appropriate liaison and consultation with the fishing industry.</p>	<p>The MMO defer to the position of the National Federation of Fisherman’s Organisation.</p>