



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES
2010

NORTH FALLS OFFSHORE WIND FARM

Appendix B5 to the Natural England Deadline 5 Submission
Natural England's Marine Processes Advice on the Applicant's Deadline 4 Documents

For:

The construction and operation of North Falls Offshore Wind Farm, located approximately 40 km from the East Anglia Coast in the Southern North Sea.

Planning Inspectorate Reference EN010119

30 May 2025

Appendix B5 Natural England's Marine Processes Advice on the Applicant's Deadline 4 Documents

In formulating these comments, the following documents have been considered:

- [REP4-014] 7.26 Site Characterisation Report (Rev 1) (Tracked)
- [REP4-038] 9.52 Outline Sediment Disposal Management Plan (Rev 0)
- [REP4-039] 9.53 Outline Cable Specification and Installation Plan (Rev 0)
- [REP4-040] 9.54 Hydrodynamic and Dispersion Modelling Report (Rev 0)
- [REP4-041] 9.55 Supporting Information on Offshore Additional Mitigation (Rev 0)
- [REP4-042] 9.56 Hydrodynamic and Dispersion Modelling Results Interpretation (Rev 0)

Summary

Natural England welcomes the hydrodynamic and sediment dispersion modelling carried out by the Applicant which provides further information on predicted changes to suspended sediment concentrations and associated sediment deposition due to construction-related activities, and changes to tidal currents and bed shear stresses due to the presence of the wind turbines and offshore platforms and export cable protection. However, we advise that further information is needed and/or clarification is needed on the following:

- Fine-scale model resolution and ability to predict near-field effects at the SAC and MCZ
- Relating predicted changes in bed shear stress and tidal current speeds to absolute baseline bed shear stress and threshold for sediment entrainment for different sediment fractions
- Bed shear stress change results considered in relation to impacts on erosional and depositional processes near and on the seabed, seabed morphology, and seabed sediment composition at the key areas of interest/receptors (e.g. MLS SAC, KKE MCZ, nearshore, offshore sandbanks)
- WCS impacts on the KKE MCZ due to clay disposal
- WCS cable protection adjacent to MLS SAC and nearshore and consideration of confirmed WCS in terms of changes to sediment transport processes/potential
- WCS sediment disposal impacts (including clay) near KKE MCZ and MLS SAC
- Model results considered in the context of cumulative effects with other nearby projects.

Natural England considers that if this additional information, interpretation of model results, and/or clarification can be provided, then this will most likely address many of the concerns discussed in our detailed advice below.

2. Detailed comments

Table 1: Natural England's Advice On: 7.26 Site Characterisation Report (Rev 1) (Tracked) [REP4-014]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	4.2.1	Natural England notes and welcomes reductions in sediment volumes for seabed preparation/sandwave levelling (e.g. array cables, turbine, and OSP/OCP foundations). However, we also note that the export cable seabed preparation sediment volume has increased considerably from 1,544,891m ³ to 4,634,673m ³ .	We advise that the Applicant should provide the rationale for the significant increase in the worst-case scenario sandwave levelling for the export cable corridor.

Table 2: Natural England's Advice On: 9.52 Outline Sediment Disposal Management Plan (Rev 0) [REP4-038]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	3.3	Natural England notes that clay material produced from dredging the Deep Water Routes would need to be disposed within a different section of the disposal site including within the array area. This is estimated to have a volume of 304,917m ³ and a seabed footprint of 200,000m ² when deposited. It is stated that there will be no direct disturbance in the KKE MCZ. This has not been assessed for impacts to marine physical processes receptors.	As above, we advise that a constraint should be considered to avoid clay disposal near KKE MCZ. The WCS parameters for the disposed clay mound/s and persistence should also be provided. With preference given to disposal of sediment within similar sediment type, and avoidance of the formation of berms which could disrupt sediment transport.

Table 3: Natural England's Advice On: 9.53 Outline Cable Specification and Installation Plan (Rev 0) [REP4-039]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	1/para 3	The Outline Cable Specification and Installation Plan (OCSIP) covers only the export cables within the Export Cable Corridor (ECC). It does not include the inter-array cables within the array area and, therefore, there are no details on their installation and cable route preparation.	Can the Applicant clarify where this information will be provided?
2	4.3/para 40	It is stated that in the intertidal any cable remedial protection methods will be buried. Natural England welcomes this commitment. However, we note that there is the potential for cable remedial protection to be placed in the nearshore (out to 1600m seaward of MHWS) (although this will not comprise loose rock or gravel). Therefore, we remain concerned that the presence of 1.4m-high cable protection beyond the intertidal, but still within shallow water, could present a significant protrusion from the seabed, and could act as a barrier to sediment transport processes and, in turn, lead to coastal/nearshore morphological change.	<p>We advise that the WCS parameters for cable protection in shallow water need to be provided and considered in the context of the latest modelling assessment of impacts to currents and sediment transport patterns due to the presence of nearshore cable protection. However, in line with our Rel Reps [RR-243], we advise that cable protection measures should be avoided in shallow water, wherever possible.</p> <p>We also refer the Applicant to the joint NE & JNCC best practice for subsea cables (Nature Conservation Considerations and Environmental Best Practice for Subsea Cables for English Inshore and UK Offshore Waters, 2022).</p>
3	4.3	Natural England understands that, as stated, where burial cannot be undertaken, or minimum cable burial depth cannot be achieved, it will be necessary to use alternative methods of cable protection. However, we note that the mitigation hierarchy is not discussed here.	We advise that the mitigation hierarchy needs to be applied as best practice, and external cable protection should only be used, if/where necessary, according to the mitigation hierarchy. Furthermore, we advise that the removability of cable protection measures should be considered.
4	3.4/para 27	Natural England notes that the CSIP does not yet include details of the approach to sandwave levelling,	We advise that in areas of mobile bedforms, the survey corridor should be sufficiently wide to allow identification of areas with deeper sandwave troughs that have the potential to affect the buried cable over the lifetime of the Project.

5	General comment	Natural England notes that currently the Cable Specification and Installation Plan (CSIP) only includes the predicted impact footprint for one activity (pre-lay grapnel run). This is important as it informs the assessment of the actual impact against those identified in the ES and any other relevant HRA or MCZ assessments.	We advise that the CSIP will need to provide the footprint of impact of chosen methodologies and show how that complies with the ES and other assessments. Information should also be provided on whether the proposed impacts are as predicted. Furthermore, any relevant mitigations proposed in the ES should be clearly laid out, along with details on how they will be implemented in the installation methodology.
6	General comment	Natural England highlights that currently the CSIP does not include a cable installation programme.	We advise that a detailed cable installation programme will need to be included in the CSIP.

Table 4: Natural England's Advice On: 9.54 Hydrodynamic and Dispersion Modelling Report (Rev 0) [REP4-040]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	General comment	Natural England welcomes the hydrodynamic and dispersion modelling carried out by the Applicant.	N/A
2	Table 5-2/5.2.4	<p>Natural England advises that it is not clear whether the model bathymetry resolution is sufficiently detailed to inform understanding of potential impacts to sediment transport patterns, seabed sediment composition and seabed morphology at key features such as Margate and Long Sands Special Area of Conservation (MLS SAC) or Kentish Knock East Marine Conservation Zone (KKE MCZ). For example, near-field effects that may extend from individual turbines to overlap with KKE MCZ, or that may extend from cable protection along the ECC, to overlap with the SAC.</p> <p>We also note that the tidal hydrodynamic model was run for the proposed windfarm</p>	<p>We advise that further information and/or clarification is needed to demonstrate that the model resolution is sufficiently detailed to adequately inform assessment of changes to hydrodynamic and sediment transport near/at the SAC and MCZ.</p> <p>We also advise that near-field effects should be evaluated and discussed, for example, wake effects that may extend from individual turbines into the KKE MCZ and cable protection blockage effects on sediment transport processes at MLS SAC.</p> <p>We also advise that the contribution of array cable protection measures to changes in tidal current speed and bed shear stresses should be considered.</p>

		scenario with WTGs and OSP/OCPs included but not array cable protection. The contribution of array cable protection measures to predicted changes in tidal current speeds and bed shear stresses are not discussed.	
3	6.3.2 & Table 6-2	Whilst changes in bed shear stress have been presented, Natural England notes that the baseline absolute bed shear stresses have not been presented. Moreover, the predicted bed shear stress changes have not been assessed against the threshold for sediment movement for the different sediment fractions at the key areas of interest (e.g. SAC, MCZ, offshore sandbanks). Natural England advises this information is needed to inform understanding of potential changes to deposition and erosion rates, seabed morphology, and seabed sediment composition due to the proposed development.	We advise that the modelled changes in bed shear stress need to be presented/considered relative to baseline absolute bed shear stresses and the threshold for sediment movement for different sediment fractions. Furthermore, the predicted changes in bed shear stress need to be evaluated in terms of impacts on erosional and depositional processes near and on the seabed, seabed morphology, and seabed sediment composition at the key areas of interest (e.g. KKE MCZ, MLS SAC, offshore sandbanks etc.).
4	5.3.5/Figure 5.18	The Applicant considers it likely that cables adjacent to MLS SAC would be buried. But presently Natural England advises that the potential for placement of cable protection adjacent to the northern boundary of the MLS SAC, cannot be ruled out. We also note that the indicative cable protection requirement included in the hydrodynamic model (Figure 5.18) identifies only one 400m-length of cable protection adjacent to the SAC. It would be helpful if the Applicant can confirm whether this represents the WCS external cable protection requirement adjacent to the SAC? If not, then we advise that the WCS cable	We advise that further clarification is needed on the WCS cable protection requirement along the ECC adjacent to MLS SAC and/or confirmation that no (or limited amounts of surface laid cable protection will be placed within the Zone of Influence for MLS SAC.

		protection requirement adjacent to the SAC should be considered in the model.	
5	6.15	<p>Natural England notes that the model setup for sediment disposal within the array has used a worst-case location for sediment dispersal at the northern end of the array. This shows that sediment deposition following sediment disposal within the array may extend up to 750m with a thickness of up to 0.5m. Given that there is the potential for sediment disposal to take place anywhere within the array, we advise that model output should be provided for sediment disposal adjacent to the MCZ.</p> <p>We also note that the modelling has not considered sediment dispersion near MLS SAC due to sediment disposal within the ECC disposal site. Therefore, the WCS for plume dispersion and associated sediment deposition due to disposal in the ECC needs to be clarified with respect to impacts on MLS SAC.</p>	<p>We advise that model output should be provided for a sediment disposal location adjacent to KKE MCZ, to inform understanding of the potential impacts to seabed level change at the MCZ due to sediment disposal.</p> <p>We also advise that the WCS for sediment disposal in the ECC with respect to MLS SAC, should be considered in the assessment.</p>
6	Section 7	<p>Natural England welcomes the updated information on sediment plume dispersion and associated sediment deposition due to the different construction activities, with a focus on MLS SAC and KKE MCZ receptors.</p> <p>We also note that predicted WCS sediment deposition thicknesses have been provided for different construction-related activities at KKE MCZ, as follows:</p>	<p>We advise that the Applicant should clarify whether there is the potential for different construction activities to be carried out concurrently and whether some/all the resulting sediment deposition thicknesses should be summed to provide a total or cumulative deposition thickness that may affect the MCZ.</p>

		<ul style="list-style-type: none"> • seabed preparation for smaller/larger WTG foundations sediment deposition will not exceed 0.05m; • sandwave and megaripple levelling for array cable installation would lead to an initial deposition (over a small area of the MCZ) of 0.05-0.6m; • seabed trenching for array cable installation sediment deposition of approx. 0.05m near the MCZ; • drilling for smaller WTGs sediment deposition of <0.005m/larger WTGs sediment deposition of <0.005m; • sediment deposition due to dredged sediment disposal within the array area would be <0.5m and extend <700m from the release point. <p>However, it is not stated whether there is the potential for these construction activities to be carried out concurrently and/or whether some/all resulting sediment deposition thicknesses can be summed to provide a total or cumulative deposition thickness. Natural England advises that this needs to be clarified to increase understanding of potential seabed level changes within the MCZ.</p>	
7	General comment	<p>Natural England notes in [REP4-039] that cable protection (not loose rock or gravel) may be placed in the nearshore. However, this has not been included in the indicative layout of cable protection used in the hydrodynamic modelling or assessed in terms of potential impacts to nearshore sediment transport processes and coastal morphology.</p>	<p>We advise that the WCS for cable protection placement in the nearshore should be considered in the context of the hydrodynamic modelling results.</p>

Table 5: Natural England's Advice On: 9.55 Supporting Information on Offshore Additional Mitigation (Rev 0) [REP4-041]

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	3.3.3.1.1	Natural England notes that it has been concluded that, based on the relevant pressures, receptor sensitivity, and assessment of impacts against the MCZ feature attributes, the conservation objectives will not be hindered (by SSC and) sediment deposition. However, in Table 4 above, the overall/total WCS thickness of sediment deposition within the MCZ, due to construction activities in the array, should be provided to inform the impact assessment against the MCZ feature attributes.	We advise that the Applicant should confirm the WCS sediment deposition thickness for construction-related activities at KKE MCZ, to inform the impact assessment.

Table 6: Natural England's Advice On: 9.5 Hydrodynamic and Dispersion Modelling Results Interpretation (Rev 0) [REP4-042]

		Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	Section 4.3.2	Natural England highlights that the hydrodynamic model results have not been evaluated in terms of impacts to offshore sandwave-sandbank systems present within the array area (e.g. The Galloper). These are important seabed morphological features and may be affected by changes to tidal currents and bed shear stress, for example, the Galloper and North Falls sandbanks. Hence, we advise that the assessment of receptor sensitivity and effect significance should also consider impacts to offshore sandbanks within the array area.	We advise that the hydrodynamic model results should be considered in the context of impacts to offshore sandbanks present within the array area.

2	General comment	Natural England advises that there is the potential for a cumulative effect with regards to tidal currents, sediment transport and morphological change.	We advise that the hydrodynamic model results should also be assessed in terms of other plans, projects and/or activities which may result in cumulative effects that affect marine processes receptors such as the MCZ, SAC, coastal/nearshore morphology, and offshore sandbanks.
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