THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010

NORTH FALLS OFFSHORE WIND FARM

Appendix B4 to the Natural England Deadline 4 Submission

Natural England's comments on 9.34 Further Information Regarding Seabed and Bedform Mobility, and Implications for Sand Wave Recovery after Levelling [REP3-045]

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

25 April 2025

Appendix B4 Natural England's comments on 9.34 Further Information Regarding Seabed and Bedform Mobility, and Implications for Sand Wave Recovery after Levelling [REP3-045]

In formulating these comments, the following document has been considered:

- [REP3-045] 9.34 Further Information Regarding Seabed and Bedform Mobility, and Implications for Sand Wave Recovery after Levelling

1. Detailed comments

Table 1: Natural England's Advice On: Marine Processes

Document reviewed: [REP3-045] 9.34 Further Information Regarding Seabed and Bedform Mobility, and Implications for Sand Wave Recovery after Levelling			
NE Ref	**Section**	**Key Concern and/or Update**	**Natural England's Advice to Resolve Issue**
1	11	Natural England welcomes the additional information provided by the Applicant on the sandwave fields identified within the proposed order limits. Two primary sandwave fields have been identified within the offshore export cable corridor (OECC) and two within the array. These sandwave fields are the areas where it is anticipated that sandwave levelling will be required. There is no mention in the note whether identification of specific sandwave levelling locations has enabled the Applicant to reduce the worst-case scenario (WCS) sediment disturbance volume due to sandwave levelling, accordingly. It would be helpful if this could be clarified.	We seek clarification from the Applicant as to whether the WCS sandwave levelling sediment disturbance volumes, as presented in the ES, can now be reduced in line with the refinement of anticipated sandwave levelling areas.
2	Figures 2.3-2.15	The bathymetric survey data presented in this technical note are helpful for characterising the bedforms and their geometry, which we welcome. However, direction of bedform movement has been derived from a single dataset of bathymetric surveys (May-Sept 2021).	We advise that further bedform migration analysis will be needed using high-resolution, time-lapse bathymetry from multiple surveys carried out over the same area of seabed at different times. This should be considered in the pre- and post-construction monitoring scope and methodology (i.e. captured in the IPMP).

		Therefore, while the survey data presented may give an indication of bedform movement direction at the time of the survey (i.e. a snapshot), bedform migration analysis requires high-resolution, time-lapse bathymetry, from multiple surveys carried out over the same area of seabed at different times. This should enable the monitoring of the change in the sandwave crest position and estimation of sandwave migration direction and rates. Moreover, by estimating the lowest observed sandwave trough that could migrate to a given point along the centreline (actual location of the cable) during the project lifetime, this will provide a vertical reference level for sandwave levelling and reduce the risk of cable exposure.	
3	2.21/Para 13	Natural England notes that whilst consideration has been given to particle size distribution; no consideration has been given to the relative importance of water depth, waves, and tides, in driving seabed mobility and morphological change. However, it is suggested that the sandwaves observed in the west of the OECC and in the southern part of the array will be stable over the long-term. Furthermore, as noted above, the conclusions of long-term bedform stability, bedform migration and sediment transport direction have been based on one dataset of bathymetric surveys. Therefore, we do not believe there is sufficient information to support the conclusions of likely bedform stability over the long-term.	As advised above, further repeat surveys will be needed to support the conclusions made regarding long-term stability of the bedforms, and to quantify their migration direction and rate. Consideration will also need to be given to water depth, and the relative importance of waves and tides for seabed mobility and driving morphological change. As detailed above, Natural England welcomes the additional information presented but note that the evidence remains limited. Therefore, based on the information presented, we believe there is a low risk of marine processes being significantly impacted. However, we recommend that surveys will be required pre consent and post consent to verify predictions.
4	2.4/Para 30	It is expected that sandwave recovery will occur within a few days to a year (based on evidence from Race Bank Larsen *et al*. 2019). However,	We advise that it is important to gather sufficient evidence pre-construction to validate the predictions of sandwave recovery. We also refer to our advice and guidance on IPMPs in [REP2-053].

		Natural England notes that the report only showed a trajectory towards recovery and not full recovery.). In addition, we note that currently, there are no specific details in the IPMP [APP-245] on the proposed sandwave recovery monitoring scope, methodology and programme. There are also no measures of success or triggers for intervention. (Although, we understand that the scope of the surveys, programmes and methodology will be submitted to the MMO for approval prior to the survey works commencing.) Consequently, we advise that sufficient evidence will need to be gathered pre- and post-construction to validate these predictions of sandwave recovery.	