



THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES  
2010

Outer Dowsing Offshore Wind Farm

**Appendix B2 to the Natural England Deadline 4 Submission**  
**Natural England's comments on Marine Processes including the Applicants**  
**Sandwave levelling Study [REP3-047]**

For:

The construction and operation of Outer Dowsing Offshore Wind Farm located approximately 54 km from the Lincolnshire Coast in the Southern North Sea.

Planning Inspectorate Reference EN010130

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3<sup>rd</sup> February 2025

## **Appendix B2 - Natural England's Advice on documentation submitted and updated at Deadline 3 related to Marine Physical Processes**

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

- [REP2-040] 8.13 Schedule of Mitigation (Tracked)
- [REP3-047] 20.15 Sandwave Levelling Study
- [APP-152] 6.3.7.3 Seabed Mobility Report (Confidential)

### **1. Summary**

Natural England welcomes the Sandwave Levelling Study [REP3-047] carried out by the Applicant. This study includes an assessment of the likely occurrence of seabed mobility during the tidal cycle for a number of wave conditions and for different sediment grades within discrete sections of the export cable route and array. It also analyses available field data to support conclusions of sandwave recovery following the Project's proposed seabed levelling activities, and we note the report largely echoes the findings of the Seabed Mobility Report [APP-152].

Natural England also highlights that presently there is no evidence to demonstrate that sandwave levelling in English benthic Marine Protected Areas (MPAs) has in fact ensured that cables have remained buried and negated the need for cable protection. Also, there is currently limited evidence for timescales for recovery of sandwaves from sandwave clearance, or that the sandbank system will remain undisturbed. Initial monitoring from Race Bank highlighted that some dredged areas showed some signs of infill within a few months of dredging and other areas did not. With a follow up study by Larsen et al. 2019 demonstrating that there was a trajectory toward recovery at Race Bank a year after sandwave levelling and cable installation has occurred, but complete recovery was not observed. Therefore, whilst we agree that theoretically larger morphological processes should enable the sandbank to recover, the impact is none the less significant and timescales for recovery remain unclear.

Therefore, we advise that further and more extensive site-specific bathymetric data will be needed to more accurately and confidently assess bedform migration directions and rates. Prior to installation, mobile bedform surveys should be carried out within a corridor wide enough to identify areas with deeper troughs that have the potential to compromise asset integrity over its lifetime. Following installation, surveys should be carried out to provide

observations of the degree of bedform recovery and confirmation of these predictions. Monitoring should also demonstrate the success of the mitigation measure in avoiding the need for cable protection. This would also provide important evidence on the environmental effects and recovery from sandwave levelling/pre-sweeping, as advised to the In Principle Monitoring Plan at Deadline 3 [REP3-075].

## **2. Detailed Comments**

Natural England provides detailed comments and advice to the Sandwave levelling Study [REP3-047] submitted by the Applicant in Table 1 below.

**Table 1: Natural England's Detailed Advice on - 20.15 Sandwave Levelling Study [REP3-047]**

NE Ref	Section	Key Concern and/or Update	Natural England's Advice to Resolve Issue
1	General Comment	The Applicant has provided a Sandwave Levelling Study in response to Natural England's concerns regarding impacts of sandwave clearance and the likelihood of sandwave recovery following seabed preparation activities within discrete sections of the offshore Export Cable Corridor (ECC) and Array Area.	Natural England welcomes the Sandwave Levelling Study [REP3-047] carried out by the Applicant which complements the earlier [APP-152] Seabed Mobility Report. However, further and more extensive site-specific bathymetric data (see Natural England's In Principle Monitoring Plan (IPMP) advice provided at Deadline 3 [REP3-075]) will be needed prior to construction to more accurately and confidently assess bedform migration directions and rates in the form of a bedform migration study.
2	Section 2.2	<p>Proposed Sandwave Levelling Works. It is stated that in some locations, sandwave levelling may be required so that cable laying tools are not impeded by abrupt seabed slopes and cables can be buried below the trough of mobile sandwaves, where required. Dredging may also be used to remove surface layers of mobile sediment to the depth considered to the Reference Seabed Level (RSBL) where the RSBL is defined as the "<i>non-mobile' reference level beyond which the seabed will not fall within the lifetime of the windfarm.</i>"</p> <p>Natural England advises that impacts to sandbanks are reduced as much as possible using the mitigation hierarchy.</p>	Natural England advises that further consideration should be given by the Applicant to ideally avoiding sandwave fields to reduce the risk of cable exposure and avoid the need for sandwave levelling. If re-routing of the cable route is not possible, micro-routing could be used to reduce the number and/or dimensions of the bedforms directly affected. In turn, this may reduce the volume of dredged material. Where micro-routing is also not possible, we advise that the cable route(s) should be designed to cross sandwaves in the shortest possible distance, perpendicular to the crest – again this may reduce impacts to seabed morphology and the volume of dredged material.
3	Section 2.2	The Seabed Mobility Report (Confidential) [APP-152] recommended acquisition of further and more extensive site-specific epochs of bathymetric data to allow more accurate and confident assessment of observed bedform migration directions and rates. It also identified potential bedform migration reversals which could add uncertainty to infrastructure stability.	Natural England advises that prior to installation, mobile bedform surveys should be carried out within a corridor wide enough to identify areas with deeper troughs that have the potential to compromise asset integrity over its lifetime (unless these can be identified with confidence in existing data). This monitoring should also be detailed and secured in the IPMP, as advised in [REP3-075].

		These evidence gaps and uncertainties may affect the establishment of an accurate RSBL which in turn could affect asset integrity and cable exposures over the lifetime of the Project.	
4	Section 5/Para 109	<i>“...once a specific area of sandwaves are cleared then all dredged sediment will be deposited within the Order Limits within an area of similar sediment characteristics, in close proximity to the dredge location in order to retain sediment within the sediment transport system (Reference 6, Schedule of Mitigation (APP-287). In particular, any sediment dredged for sandwave clearance within the designated SAC will be retained within the same area (Reference 7, Schedule of Mitigation (APP-287)).”</i>	Natural England advises that in order to maximise the potential for sandwave recovery and limit the effects on the wider sediment transport processes, dredged material should be deposited in similar sediment type, updrift of levelling and cable trenching operations to encourage natural backfill and reworking of material (except where an upstream deposition may have an adverse impact on another feature). This should be built into the relevant mitigation (Refs 6 and 7 of the Schedule of Mitigation [REP2-040]).
5	Section 6/Para 137	We note that for the proposed sandwave clearance activities, sandwave recovery is anticipated in all cases, which is welcomed. However, this conclusion should be supported with evidence post-installation.	Natural England advises that post-installation surveys should be carried out to provide observations of the degree of bedform recovery and confirmation of these predictions. The monitoring should also demonstrate that this mitigation measure has been successful in negating the need for cable protection. This would also provide important evidence on the environmental effects and recovery of sandwave levelling/pre-sweeping. We refer the Applicant to our advice provided at Deadline 3 on the IPMP [REP3-075].
6	Section 6/Para 138	With regards to the Inner Dowsing, Race Bank and North Ridge (IDRBNR) Special Area of Conservation (SAC), it is stated that once returned to the seabed, <i>“the deposited sediment will quickly become part of the local sedimentary system, therefore presenting minimal potential to affect the form and function of the sandbank system as a whole. The existing Annex I sandbank features will be maintained and therefore the conservation objectives for the SAC will be met.”</i>	Natural England advises that consideration needs to be given to other nearby developments/projects and potential cumulative impacts on the SAC and other affected Annex I sandbank features.

		<p>There are other impacts to the physical features of the IDRBNR SAC (and its conservation objectives) due to ODOW and other nearby projects/developments which need to be considered. The SAC Annex I Sandbank features currently have a restore target for their extent and distribution and maintain target for topography and volume attributes. Moreover, the Statutory Nature Conservation Bodies (SNCBs) consider site integrity to have been hindered by impacts due to Race Bank Offshore Wind Farm infrastructure. This has also compromised the ability of the site to meet its conservation objectives. Consequently, there is insufficient evidence in the Sandwave Levelling Study to support the conclusions regarding the SAC because the ODOW bed levelling/sandwave clearance impacts cannot be viewed in isolation.</p>	
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