



THE PLANNING ACT 2008  
THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE)  
RULES 2010

HORNSEA PROJECT THREE OFFSHORE WIND FARM

Planning Inspectorate Reference: EN10080

**Annex D3: NE and JNCC advice on Sandwave Clearance  
Clarification Note and other relevant documentation on sandwave  
levelling**

7 November 2018

## 1. Introduction

- 1.1. Natural England received an additional document from the Applicant on 9<sup>th</sup> October 2018, titled: Sandwave Clearance Clarification Note. This Annex presents Natural England's general and detailed comments on sandwave levelling, taking into account the information provided in the clarification note.

## 2. Recoverability

- 2.1. Firstly Natural England queries why the Applicant has presented different data for Hornsea Project Three from that presented on and for their other project Race Bank OWF in relation to sandwave clearance. Whilst it may well be a matter of timing of reports and internal communication, it gives the impression that they are presenting relevant bits of the data that suit their case.
- 2.2. Whilst the sandwave levelling clarification note has some good points, the Race Bank sandwave recovery report is more convincing in terms of evidence that sandwaves will recover from standard dredging.
- 2.3. However, we remain confused by the different locations monitored and reported on in the two reports. Based on the sandwave recovery report from Race Bank we believe that there is some confidence that sandwaves will recover, but there is a question as to how relevant that is to the area proposed for the export cable route through North Norfolk Sandbanks SAC where the sandbanks are generally deeper and less exposed to wave action; so recovery there is likely to be slower – potentially years rather than months.
- 2.4. We also are interested in the changes in smaller scale topography observed in the Race Bank monitoring in areas around the impact as we would not have necessarily expected those changes and we are unsure if they would have any impact on biological communities. Equally there does not appear to be any analogy for the section of the Wash and North Norfolk Coast SAC or the Cromer Shoal Chalk Beds MCZ impacted by the cable installation, so it is not clear how analogous the Race Bank data are to the Hornsea Project Three proposed works. Should they be analogous in terms of conditions then it is likely that we could be more confident in terms of recovery.
- 2.5. We believe that the Applicant has now provided sufficiently justified to support their proposed sandwave clearance volumes. However, we would like to understand how the actual volumes of sandwave clearance undertaken as part of the Race Bank Project relate to the volumes they applied for.
- 2.6. The main factors that are considered to influence the recovery potential (i.e. the mechanism and speed of recovery) of the levelled sandwaves are:
- 2.7. The dimensions of the dredged area, particularly the width and depth of the dredged channel relative to the overall sandwave height, and the alignment of the dredged channel relative to the crest axis; and
- 2.8. The degree of sediment mobility at the dredge location, which is in turn controlled by the environmental forcing conditions and water depth.
- 2.9. It would therefore be useful to ensure any assessment of the offshore sites takes this into consideration and we believe that the relevant site information is available to undertake such an assessment. Understanding these factors would also inform assessment of hydrological process impact within site integrity tests.

### 3. Differentiation between nearshore and offshore sandbanks

3.1. The document presented does not make any distinction in the potential recovery of offshore and nearshore sandbanks. There is some analogy to what has happened with sandwave clearance at Race Bank, but no taking into account local conditions in each site and likelihood and timescales of sediment reworking.

### 4. Comparison between HOW03 and Norfolk Vanguard

4.1. Natural England is aware that Norfolk Vanguard (also in the planning system) proposes sandwave levelling within an offshore SAC namely Haisborough Hammond and Winterton. Therefore we thought it appropriate to undertake a review to compare the evidence presented to support that application with that for HOW03 and North Norfolk Sandbanks.

4.2. In summary both HOW03 and Norfolk Vanguard come to the same conclusions – i.e. no significant impacts from sandwave clearance on relevant MPAs- with the evidence in the Norfolk Vanguard’s assessment providing more confidence in the conclusions. Therefore, we are more confident in the conclusions, but there still remains some uncertainty around site specific impacts from the actual cable installation that are set out in the detailed comments below.

### 5. Detailed comments on the Sandwave Clearance Clarification Note

| Point | Section in the note | Natural England’s comments  |
|-------|---------------------|---|
| 5.1.  | General             | There is no discussion in the application about the fact that even with sandwave levelling cables may be sub optimally buried and require protection or become exposed over the life time of the protect resulting in further impacts to the site.  |
| 5.2.  | 2.7                 | This does not seem to include the same evidence as the Race Bank monitoring note – more survey locations, but fewer years’ data. As far as we can tell all the locations they look at are different. The turbine numbers for inter-array cables in this report do not appear to tie up with the map on p 9 of the sandwave recovery report. |
| 5.3.  | 2.15                | It would be useful to know how the 3 sites that showed no recovery in the post dredge images have fared in the longer term and how this relates to the sites monitored in the Race Bank sandwave recovery report.   |
| 5.4.  | 2.16                | If this is L, M and N on the pictures then we are not sure we agree with full recovery. We believe that these sites show the changes in the local area, including changes in trough topography.<br>NB: It would be helpful if the text correlated with the pictures.  |
| 5.5.  | 2.18                | It would be helpful to understand why only one out of three sites along adjacent sandwaves showed recovery when all 3 were dredged. No obvious reason for this is presented.  |
| 5.6.  | 2.19                | It could be implied that partial recovery seen is linked to only removing part of the sandwave crest height. How comparable are these examples within the Race Bank works to that within NNS SAC?   |

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|-------|------------|---|
| 5.7.  | 2.24       | <p>Important point that <i>'There is limited or no evidence of sandwave recovery, evolution or migration at site 10. The dredging at this site is to the base of the sandwave, relative to the depths of the surrounding seabed, and is nearly parallel with the sandwave alignment. As a result, a relatively large area and volume of the sandwave has been levelled. Migration is not apparent in the bathymetry images and if any infilling is occurring it is also not evident. The general lack of notable change suggests an overall lower rate of sediment mobility, rather than any fundamental difference in the processes that are active, or the potential for sandwave recovery over longer timescales at this location.'</i></p> <p>Therefore Natural England advises that a pre-construction sandwave levelling report and assessment is required to ensure that the results of any further monitoring and specific site characteristics are taken into consideration and the impacts remain within the parameters assessed especially in relation to orientation of levelling to wave and involvement in troughs.</p> |
| 5.8.  | 2.32       | Is the Applicant taking account of differing sediment transport rates along the cable corridor.   |
| 5.9.  | 2.35       | We note that there is some degree of uncertainty in relation to the scale of the impacts discussed here as shown by the use of the word 'may'.  |
| 5.10. | 2.43       | Please see HRA comments. As there is no link to the conservation objectives we are unable to say if the recovery will be sufficient to meet the conservation objectives for all of the attribute features.  |
| 5.11. | Figure 3.5 | Please see HRA comments. The assumption to date was that the levelling within NNS SAC would be over discrete waves / banks, not levelling across a larger number of smaller features, as shown in the clarification note. This situation may impact differently on the conservation objectives for the site and a more detailed HRA assessment is required before we can agree with the conclusions of the HRA that there is no adverse effect on integrity.  |