THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010

HORNSEA PROJECT THREE OFFSHORE WIND FARM

Planning Inspectorate Reference: EN010080

Annex D7: Natural England detailed comments on ES benthic characterisation of the nearshore cable corridor.

7 November 2018

1. Characterisation

1.1. The aim of a benthic ecology characterisation study is to identify the principal habitats and benthic communities present. This includes presence and extent of conservation features in order to inform any assessment of potential impacts from the project and any subsequent benthic monitoring plans. Characterisation should provide a broad coverage of the habitat types within the project area of interest, but particularly within any nature conservation designations that are intended to protect specific seabed features or where sensitive habitats and species may occur outside designated sites.

1.2. The appropriate age of data for characterisation is variable depending on the nature of the site, for instance, how stable or changeable it is. As long as the survey methods are appropriate and the coverage of the data is suitable, the age of the data is not the most important factor. More recent data is preferable and anything within ~ 10yrs is acceptable, but additional data should not be excluded if it is older than this. As with all environmental impact assessments, and the information used to inform them, the lower the confidence in the data the higher the risk of the data being inaccurate and therefore the more precautionary Natural England and consenting bodies will need to be in their respective advice and decision making. The better the data to inform assessments the more the assessment can be refined and the less precautionary the decision needs to be.

1.3. The characterisation data needs to be detailed enough to provide a good understanding of both the physical and biological environment in the proposed development's zone of impact. This is to ensure that feasibility of the development and any potential impacts are understood and presented in the consenting process. The NPS states (Section 2.6.113 NPS EN-3) that any assessment of potential impacts from a development on the subtidal environment should include consideration of:

i. Loss of habitat due to foundation type including associated sea bed preparation, predicted scour, scour prevention, cable protection (including crossings) and altered sedimentary processes;

ii. Environmental appraisal of inter-array and cable routes and installation methods;

iii. Habitat disturbance from construction

iv. It also states (Section 2.6.119) NPS EN-3) that mitigation of any possible construction and decommissioning impacts should have been considered for:

i. Surveying and micro-routing of the export cable route to avoid adverse effects on sensitive habitat and biogenic reefs;

ii. Burying cables at a sufficient depth, taking into account other constraints, to allow the seabed to recover to its natural state.

In order to meet these criteria, the EIA must provide sufficiently detailed information on the seabed habitats and biotopes of the possible impact zone. **In our opinion, the inshore section of the cable corridor does not have sufficient coverage of geophysical or benthic groundtruthing data. Without this evidence, we do not know what habitats are present and therefore if and how designated Annex I features of the Wash and North Norfolk SAC could be impacted. Most importantly it does not provide enough evidence to show that it is feasible to bury the cable in this location**, which then puts into question the validity of the parameters (WCS) provided in relation to the amount of cable protection required. Without this information Natural England has to be more precautionary in our advice and is unable to advise on the feasibility of any

mitigation measures to minimise the impacts to acceptable levels. We have outlined our specific concerns below.

2. Hornsea Three characterisation data

2.1. The Hornsea Benthic Technical report (Volume 5, Annex 2.1 - Benthic Ecology Technical Report) is detailed and shows the data available. There is appropriate characterisation data available for the location of the turbines and surrounding area. There is also a good coverage of data across the offshore area of the cable. However, there is limited geophysical and benthic data available on the inshore area of the revised cable corridor. The area from where the cable corridor diverts from its original route, to the more northerly route to landfall, has only two data points and is approximately 33 km. Please see figure 2.1 in Volume 5, Annex 2.1 Benthic Ecology Technical report.

2.2. The available data in this location is included in Figure 2.1, 4.28 and 4.29:

The report states that where specific survey data were not available the 'nearby' biotope classifications were used to 'confirm' and extend the biotope map, see figure 4.28. The process of extrapolating biotopes further than the sample location is only a valid approach if the underlying geophysical data such as Side Scan Sonar and its backscatter data are used to limit biotope extensions by linking the changes in physical environment type to the biotope type (e.g. use of acoustic facies). The information in the current cable corridor biotope map **does not** support the extrapolation for a number of reasons:

2.2.1. Figure 3.3 (also reproduced in Annex I below) shows the data available for the nearshore section of the cable corridor. There is no geophysical data available for the nearshore 33 km section of the cable corridor. In addition to this the benthic samples that have been used are from Sheringham Shoal (2006 and 1 sample from 2014), Dudgeon (2009), Cromer Shoal Chalk Bed MCZ (Defra, 2015). These are not only sparsely located, but also old mostly 2009 and 2006 with one sample from 2014. This whole section of corridor (bar the inner 4km) contains only 9 samples and has no geophysical data. We therefore do not have confidence that the data provided is an accurate representation of the habitats present in the region.

2.2.2. There are contradictions in figures 4.28 and 4.29; the geophysical data available does not support the extrapolation and extensions of the biotopes. In some cases these habitats contradict each other. **See Section 4**.

2.2.3. The underlying geophysical data provided in Figure 4.29 does not extend into the cable corridor 'buffer/margin' on the west side, yet the biotopes from individual grab samples some from the Dudgeon and Sheringham OWF cable routes (located considerably further around the coast) have been extended in to this. The lack of geophysical and ground truthed data along the actual cable route means we have little confidence in the biotope map provided.

2.2.4. In addition, there is data (circled in red on the figures in Annex I) from Seasearch dives that contradicts the biotopes presented in figure 4.28. The seasearch data shows habitat types of circalittoral and infralittoral rock, whereas the biotope map shows the same area to have biotopes SS.SSa.IFiSa.NcirBat Nephtys cirrosa and *Bathyporeia* spp. in infralittoral sand and SS.SCS.ICS.MoeVen *Moerella* spp. with venerid bivalves in infralittoral gravelly sand. The difference in sediment type from rock (seasearch survey) to sand and gravel (biotope extrapolation) is of

particular concern as these would require different cable installation techniques, limitations and mitigation.

2.3. The lack of ground truthed information along this same section of cable corridor is of particular concern with respect to assessing which Annex I habitats are present. The Wash and North Norfolk Coast SAC has a high level of protection and therefore the evidence requirements are highest.

2.4. Considering this lack of data, we do not believe the EIA provides adequate information to characterise and assess the impacts of this installation to the protected sites (such as the Wash and North Norfolk SAC) and the wider marine environment.

3. What level of information is required for the cable corridor?

3.1. Good quality geophysical data is required across the cable corridor, including any margins/buffers to these locations and any possible alternative cable routes (Ware and Kenny 2011).

3.2. We advise, this geophysical data should be used to determine the locations of the benthic groundtruthing stations, typically grab samples of drop-down video tows. These groundtruthing stations should be targeted to ensure good coverage of the project and its zone of impact and that there are representative samples in all of the different geophysical signatures seen. It is possible to plan the groundtruthing sampling array without the geophysical data, but more samples would be required.

3.3. In terms of the current data for the cable route, full geophysical coverage together with an additional 10-15 benthic samples is required in the inshore cable section to enable us to be confident in the habitat maps provided. This will then provide sufficient information to inform an assessment of the potential impacts of cable installation on the identified features of relevant MPAs (and the wider marine environment). A full assessment should include:

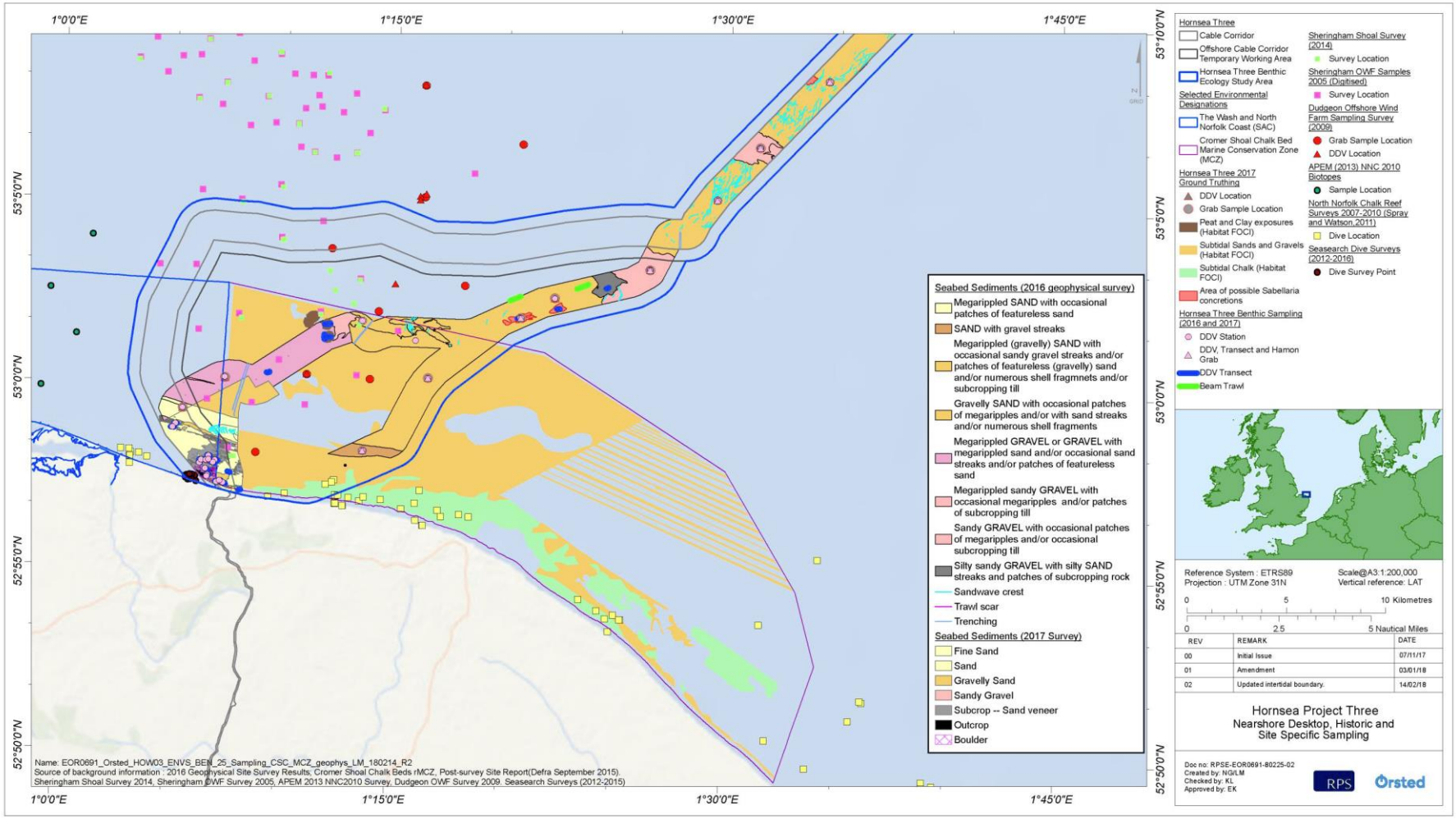
3.3.1. Realistic worst case scenario predictions of area of each relevant habitat type/ species impacted along with realistic assessment of recovery from the cable installations and associated activities and infrastructure. Evidence from developments of similar scale and in a similar habitat should be analysed and presented. The assessment should also refer to sensitivity and recoverability information that is provided in the most up to date Conservation Advice for each feature.

3.3.2. An assessment of how the above predictions relate to the conservation objectives of any relevant MPA, Further information on the subsurface geology (geotechnical information) and coastal processes should also be taken into consideration as this will import the likelihood of a particular impact occurring and it's longevity.

3.4. This characterisation is also critical in terms of informing the pre-construction benthic baseline array and ongoing monitoring surveys of the array and cable corridor should it be consented. The current data available does not provide enough information to know where to target sampling for the baseline and subsequent monitoring.

4. Figures

4.1 Reproduced Figure 3.3 Nearshore section of Hornsea Three offshore cable corridor, with Hornsea Three site specific geophysical data and benthic sampling locations (2016 and 2017) and historic datasets (i.e. Sheringham Shoal (2006 and 2014), Dudgeon (2009), Cromer Shoal Chalk Bed MCZ (Defra, 2015) and The Wash and North Norfolk Coast SAC (APEM, 2013; Natural England, 2017)).



4.1 Reproduced Figure 4.29 from Hornsea Project 3 Offshore windfarm Environmental Statement: Volume 5, Annex 2.1 - Benthic Ecology Technical Report.

Figure 4.29: Hornsea Three nearshore geophysical seabed interpretation showing subcropping rock (grey) and areas of potential outcrop (black), DDV ground truthing transects with epifaunal biotopes identified and historic records of infralittoral and circalittoral rock in the nearshore area.

4.3 Reproduced from Figure 4.28 from Hornsea Project 3 Offshore windfarm Environmental Statement: Volume 5, Annex 2.1 - Benthic Ecology Technical Report.

The areas circled in red show 2 different habitats in the same location. Figure 2.29 shows circalittoral rock and infralittoral rock from seasearch samples and rock outcrops with sand veneers. In addition Figure 4.29 has data from the 2017 seabed sediments survey which shows subcrop and outcropping rock as well as some sand and fine sand. In contrast in the same location Figure 2.28 shows subtidal sand. These obviously contradict each other and need to be resolved to understand the impacts and feasibility of installing a cable in this location.