THE PLANNING ACT 2008

THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010

Morgan and Morecambe Offshore Wind Farm: Transmission Assets

Appendix G4 to Natural England's Deadline 4 Submission
Natural England's comments on the Outline Hydrogeological Risk Assessment of Lytham St Annes Dunes SSSI

For:

The construction and operation of the Morgan and Morecambe Transmission Assets located approximately 0 - 37 km from the Northwest English Coast in the Irish Sea.

Planning Inspectorate Reference EN020028

08 August 2025

Appendix G4 – Natural England's Comments on Onshore Ecology and Nature Conservation

In formulating this advice, the following documents have been considered:

- [REP3-061] Outline Hydrogeological Risk Assessment of Lytham St Annes Dunes SSSI

1. Major/Complex comments

1.1. Summary

Natural England attended a meeting with the Applicant on 12 June 2025 to discuss the Outline Hydrogeological Risk Assessment of Lytham St Annes Dunes SSSI and the necessary detail to be included, subsequently the Applicant submitted an Outline Hydrogeological Risk Assessment of Lytham St Annes Dunes SSSI at Deadline 3.

Having reviewed the document, our primary concerns remain in regard to limited data/evidence/information in particular areas including (but not exclusively): the presence/location of any groundwater dependent features in the golf course, seasonal variability and the effects on the groundwater table, site specific groundwater conditions. Therefore, we would welcome further clarity on when any surveys will be undertaken, and evidence gaps addressed in order to inform cable burial depth. Our detailed advice on [REP3-061] is included in Table 1 below.

1.2. Detailed comments – Onshore Ecology and Nature Conservation

Table 1: Natural England's advice on [REP3-061] Outline Hydrogeological Risk Assessment of Lytham St Annes Dunes SSSI

Document reviewed: [REP3-061] Outline Hydrogeological Risk Assessment of Lytham St Annes Dunes SSSI			
NE Ref	**Section**	**Key Concern and/or Update**	**Natural England's Advice to Resolve Issue**
1	General [REP3-061]	Natural England is pleased to see the Applicant's commitment to producing and implementing a detailed Hydrogeological Risk Assessment which will be secured through Requirement 8 of the draft DCO. In addition, the outline Hydrogeological Risk Assessment pulls together information from a number of sources (previously presented in multiple documents for Deadline 1) and is helpful in drawing together the evidence regarding the potential groundwater pathway(s) that may exist between the landfall and key ground water dependant features of the SSSI/ LNR and BHS. The document considers dewatering during construction excavations, the construction activities themselves and the permanent presence of the cable beneath the dunes.	Natural England advises that the outline Hydrogeological Risk Assessment should be updated with the information gained during the next stage of the assessment as outlined in Section 5. This includes incorporating data from the recently commissioned NVC survey of Lytham St Annes Dunes SSSI/ LNR and St Annes Old Links Golf Course & Blackpool South Rail Line BHS. Key information will be the confirmation of no ground water dependant features within the golf course which should be provided prior to the end of examination. In addition, if further information is received from the St Annes Old Links Golf Course with regards to groundwater abstraction this should also be presented and reviewed.
2	1.3.4.1	Natural England notes that the report recognises data limitations including that there has not been any direct data capture related to the ground conditions of the SSSI/LNR/BHS, including the groundwater regime and its likely seasonal variability. In addition, there remains questions regarding combined effects of the Golf Course groundwater abstraction and the permanent presence of the cable (depending on cable burial).	Natural England still has concerns around seasonal variability (and extreme weather events *i.e.* drought brought about from future climate change) with regards to the position of the groundwater table and potential impacts on groundwater dependant features of the SSSI, LNR and BHS. Depending on cable burial depth, this is relevant to the permanent presence of the cable ducting which could be in-situ for decades. This is presently a gap in understanding which we advise should be addressed during Examination.

			We advise that further in-combination assessments are undertaken and included in the OHRA for Lytham St Annes SSSI.
3	2.5.1.1 5.1.1.4	Natural England advises that the depth of the groundwater table is still unclear although the report notes that it is likely to be <1m (based on observations during drilling of a borehole). The report goes on to note: *"The presence, sensitivity and temporary or permanent impact on any water table or tables as a consequence of the project is considered to be the primary risk as this impact has the potential to* *adversely affect the current local hydro-ecological 'steady state' that supports both the current SSSI/LNR/BHS biodiversity as well as the golf club abstractions. Shallower water tables are considered to have a relatively higher sensitivity than deeper ones owing to their increased potential to support dune slack habitats."* In addition, it is also unclear whether the groundwater table is laterally continuous or discontinuous across the site. Section 3.4.1.14 notes *"It is uncertain whether this water table is continuous beneath the SSSI or present as a discontinuous perched water resting above lower permeability strata*". There are also remaining questions around interactions between rainfall and groundwater, i.e., what groundwater recharge is typical following rainfall events or on a seasonal basis, and how the elevation of any water table or tables responds. The report under next steps suggests that further ground information may be required to establish site specific groundwater conditions. It goes on to say that this could comprise a borehole drilled to a depth of the Mercia Mudstone Formation bedrock strata (to confirm the depth of	Natural England advises that an additional borehole could provide more assurance on the depth below surface of the glacial till within the dune system, but depending on its location, undertaking a further borehole could impact the SSSI. Therefore, Natural England seeks further clarity on if and when data will be collected. We advise that further information is required on: • Where this borehole may be located (especially if it is within the SSSI); and • Whether the groundwater monitoring well will be equipped with a datalogger that can be installed and left in-situ before, during and after construction – to provide longer-term data on the position of the groundwater table and seasonal variations. This data would help confirm any changes resulting in the permanently installed cable through reductions in groundwater levels due to presence of cable ducting (identified as a potential impact in Table 3-3).

		glacial clays) with a groundwater monitoring well installed at an appropriate depth.	
4	3.1.1.2 and 3.4.2.4 and 3.4.2.7	Natural England notes that with regard to cable installation, the cable burial depth is currently unknown (with min and max of 10-30m given). In addition, the exact cable routing whether north, south or split around the care home and under the SSSI/ LNR/ BHS is not yet known. This could influence the potential impacts and should be captured in the revised Hydrogeological Risk Assessment.	Natural England advises that once the cable burial depth and route is confirmed further assessment of the extent of dunes slacks that will be passed under is required and that the revised NVC survey of the SSSI/ LNR and BHS, should be used to inform this.
5	3.4.1 incl. Fig 3.1	In regard to short term reduction in groundwater levels within the SSSI and from groundwater dependent features due to temporary dewatering of TJB excavation, our main concern is keeping the predicted Zone of Influence (ZoI) well away from the SSSI boundary. Natural England believes that the methodology for defining the ZoI for the TJB dewatering seems sensible, as the Applicant has been cautious in their estimations on many levels (using 6m as a drawdown depth, which is the WCS as 6m has been given as the maximum excavation depth; doubling the initial zone of influence to allow a factor of safety; using different methods to cross-check whether the ZoI is appropriate; and not taking into account natural recharge). However, we note that the dewatering ZoI doesn't consider other abstractions, which on the one hand could be considered to obstruct the assessment of in-combination effect. But we note that the significant amount of buffering within the TJB ZoI could be sufficient to 'cover off' any potential in-combination effects.	Natural England will provide further advice on the extent of ZoI following the final cable burial/ TJB design and in light of any additional data collected as outlined in the next steps (section 5).
6	3.4.2.4 and Table 3-3	Natural England advises that the secondary mitigation of ensuring the cable is located within glacial clays is essential. This would hopefully bypass any other lasting impacts on groundwater from the cable. The boreholes seaward and	Natural England advises that the Applicant should ensure the cable burial depth is sufficient to be located in the low permeability glacial clays. This should be secured in the project commitment log.

		landward of the dune system agree that glacial clays/till is encountered at 14.4m (CP+RC) and 14.5m (MORGAN_A2_CP01B). Based on this data, a commitment to set the minimum cable depth at >15m (rather than 10m) would fully mitigate our concerns and would hopefully avoid the middle sands too, which form an important part of the aquifer.	
7	3.4.2.6	Natural England notes that the report mentions the use of Direct Pipe drilling techniques – which would limit the use of drilling fluid. However, In previous documents HDD has been mentioned	Please can the Applicant confirm that Direct Pipe drilling has been agreed and finalised for the cable installation method.
8	Table 3-2	The secondary mitigation measures to reduce the short-term reduction of groundwater levels due to temporary dewatering of TJB excavation is welcomed *i.e.*: • Potential for returning abstracted clean groundwater to ground as infiltration • Possible use of shuttered sheet piling to limit groundwater ingress • Undertaking works during periods of reduced sensitivity, i.e. when water tables (where present) are lowest	Natural England seeks clarity on how the Applicant will secure this mitigation, *i.e.* included in the project commitment log. Natural England advises that any return of water would need to make sure that it is not polluted. And the periods of reduced sensitivity would need defining, e.g. avoiding prolonged wet weather/ construction during the summer month. But we highlight that this will need to be checked against any bird sensitivities.