



Hornsea Project Four

Net Zero Teesside Development Consent Order

**Comments on the Applicant's Submissions at
Deadline 4**

Deadline: 5, Date: 02 August 2022

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1 Introduction

- 1.1 Orsted Hornsea Project Four Limited ("Hornsea Four") has reviewed the submissions made by Net Zero Teesside Power Ltd and Net Zero North Sea Storage Ltd ("the Applicant") to the Examining Authority ("ExA") at Deadline 4. This submission sets out Hornsea Four's comments in response to the following documents submitted by the Applicant at Deadline 2:
- 1.2 Applicants' response to Orsted Hornsea Project Four Limited's Deadline 3 Submission, July 2022 (REP4-030).

2 Assessment of the Impact of the Offshore Elements of the NEP Project on Hornsea Four Offshore Wind Farm

- 2.1 The Applicant's response included, at Appendix 1, an assessment of the impact of the offshore elements of the NEP project on Hornsea Four Offshore Wind Farm.
- 2.2 Notwithstanding the provision of this assessment, the Applicant maintains their position that "there is no legal obligation to consider any impact on Hornsea Project Four as part of the Proposed Development's EIA". Hornsea Four considers that the Applicant's position is incorrect, and intends to further supplement its legal submissions on this issue on or before Deadline 6.
- 2.3 The assessment considers the likely impacts on Hornsea Four Offshore Wind Farm of being prevented from constructing and operating turbines within the Exclusion Area.
- 2.4 The assessment states that "*Without mitigation, where Hornsea Project Four were prevented from constructing within the Exclusion Area, it is estimated this could lead to a reduction of approximately 45 turbines from their maximum design envelope..*" and goes on to suggest mitigation including "*..the relocation of its proposed turbines from the Exclusion Area to the residual part of their development boundary. Under this scenario, the total number of turbines could remain as at their maximum design envelope (180), with approximately 45 turbines requiring relocation, or building out fewer, larger turbines, so still delivering the 2.6GW capacity proposed within the Hornsea Project Four DCO.*"
- 2.5 The Exclusion Area represents approximately 25% of the wind farm array. Based on the Indicative Array Layout provided at Figure 4.13 of Hornsea Four's Project Description (PINS Document Ref: A1.4) and a comparable percentage reduction of wind turbines, approximately 45 wind turbines would be lost if wind development was not permitted in the Exclusion Area. For the avoidance of doubt the comparison made is simply to reflect how a 25% array reduction would potentially impact a similar 25% reduction in wind turbines (i.e. 45 wind turbines being 25% of a maximum number of 180 wind turbine generators).
- 2.6 One of Hornsea Four's core project objectives is to make efficient use of the available grid connection capacity, with a 2.6GW grid capacity secured. Increasing the wind turbine density in a smaller developable area increases the wake loss impacts of the wind farm and can have a significant effect on the generation performance. In turn, increased wake losses also increase the detrimental impact on the overall business case for the project, particularly should Hornsea Four enter into the highly competitive Contract for Difference Auction Round model where projects are effectively competing against other projects. An inefficiently designed wind farm with high wake losses is very likely to be at a significant disadvantage. For clarity, Hornsea Four needs to maintain the extent of the proposed Hornsea Four offshore order limits as is reasonable to deliver

an essential and substantial near-term contribution to the UK's decarbonisation objectives and security of supply, at a highly competitive cost per megawatt hour (MW/h).

- 2.7 As previously set out in Hornsea Four's Written Representation (REP2-089), building out larger but fewer turbines is not a viable solution. The largest current model commercially available is 14MW. Vestas have announced a 15MW wind turbine which may be commercially available however even based on the 15MW turbine Hornsea Four still requires 180 turbines to build out the secured grid capacity of 2.6GW once transmission losses are factored in.
- 2.8 The Applicant recognises that in the event Hornsea Four cannot construct any turbines within the Exclusion Area, this would result in a major adverse (significant) effect on the Hornsea Four Offshore Wind Farm, but concludes that with their suggested mitigation, the residual significance would be slight adverse (not significant). For the reasons set out above, Hornsea Four does not consider the mitigation suggested (the relocation of turbines to the residual part of the development boundary or building out fewer larger turbines) in the assessment is viable, and therefore does not agree with the conclusion on residual significance.

3 The Proposed Development and the Endurance Store

- 3.1 The Applicant states in its response to Orsted Hornsea Project Four Limited's Deadline 3 Submission that "*the Proposed Development remains acceptable and deliverable in its own right, regardless of the outcome of the dispute in the Hornsea Project 4 examination and the Secretary of State's determination in relation to the interface between the Endurance Store and Hornsea Project 4 in the Overlap Zone*" and that "*in circumstances where Orsted's submissions into the Hornsea Project Four examination were accepted and no Exclusion Area was provided, so allowing wind infrastructure to be located across the full extent of the Overlap Zone (including the Exclusion Area), the Proposed Development would nevertheless remain, in principle, viable and deliverable.*"
- 3.2 The Applicant has not, to date, clearly stated that it does not intend to use the Overlap Zone to store carbon associated with the Proposed Development. It would be very useful if the Applicant could confirm its position in this regard and in particular if it considers that the Proposed Development including the generating station and the powers sought to facilitate the transportation of carbon dioxide from within the East Coast Cluster could be delivered with a commitment not to use the Overlap Zone.
- 3.3 As presented within the Application, Hornsea Four considers that there is a clear link between the Proposed Development and the works proposed to be undertaken by the NEP Project and there is no justification for not fully considering the impacts of the NEP Project on Hornsea Four Offshore Wind Farm.