

# MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

## Annex 4.1 Applicant's response to Ørsted's IPs submission at Deadline 4

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Image of an offshore wind farm

**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

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## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

### Glossary

Term	Meaning
Applicant	Morgan Offshore Wind Limited.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Morgan Offshore Wind Project: Generation Assets	This is the name given to the Morgan Generation Assets project as a whole (includes all infrastructure and activities associated with the project construction, operations and maintenance, and decommissioning).

### Acronyms

Acronym	Description
DCO	Development Consent Order
IP	Interested Party
ISH	Issue Specific Hearing
NPS	National Policy Statement
UK	United Kingdom
WTG	Wind Turbine Generator

### Units

Unit	Description
km	Kilometres
nm	Nautical miles

# 1 ANNEX 4.1 TO THE APPLICANT'S RESPONSE TO ØRSTED IPS SUBMISSION AT DEADLINE 4

## 1.1 Introduction

1.1.1.1 This document is an Annex to Ørsted IPs submission in S\_D5\_4 Applicant's Response to IP submissions, submitted at Deadline 4.

## 1.2 Ørsted IP's submission

1.2.1.1 This document responds to the following comment made within Ørsted IPs submission at Deadline 4 (REP4-048):

### 1.2.1.2 Lack of precedence

*3.12 The Applicant's understanding is that prior to Awel y Mor, wake effects have not been considered within consenting applications for proposed offshore wind developments. This understanding is not correct. The Ørsted IPs are aware that wake effects were openly considered during the consenting process for the Burbo Bank Extension offshore wind farm, the Walney Extension offshore wind farm, and the Hornsea 2 offshore windfarm.*

## 1.3 Applicant's Response

1.3.1.1 The Applicant has carried out a review of the application and Examination material publicly available for the Burbo Bank Extension, Walney Extension, and the Hornsea Project Two offshore wind farms, in addition to the Hornsea Three and Hornsea Four projects (i.e. as available on the respective project pages on the Planning Inspectorate's website, including archived content). Following this review, the Applicant notes the following:

- **Burbo Bank Extension:** a brief and high level consideration of potential wake effects was provided within the Other Infrastructure and Licensed Activities chapter of the Environmental Statement (DONG Energy Burbo Extension (UK) Ltd., 2013), in relation to potential effects on the Gwynt y Mor project, located approximately 8 km west of Burbo Bank Extension. Paragraphs 23.9.59 and 23.9.60 of the chapter note that RWE npower renewables had raised potential wake effects as a concern. In response, it is stated that DONG Energy Burbo Extension (UK) Ltd carried out a study which concluded that potential effects would be unlikely to be measurable. The Applicant could not find any reference to this study being submitted with the application or during the Examination.
- **Walney Extension:** potential for wake effects is briefly referred to within the Other Infrastructure and Licensed Activities chapter of the Environmental Statement (DONG Energy Walney Extension (UK) Ltd., 2013). This includes reference within the consultation table, which noted that operators of nearby offshore wind farms (West of Duddon Sands, Walney II, Barrow, Irish Sea Zone and associated Offshore Transmission Owners) had raised potential for wake loss. However, it was noted in paragraph 21.7.3 of the chapter that this matter was being addressed via commercial agreement, and as such, assessment of wake loss would not be made public within the Environmental Statement.
- **Hornsea Project Two:** during the initial stages of the Examination for Hornsea Project Two (Deadline 1), potential wake effects were raised by the adjacent

Hornsea Project One development (Heron Wind Limited, Njord Wind Limited and Vi Aura Limited – the "Project One Companies")<sup>1</sup>. The Project One Companies raised that 'if Project Two is constructed up to the Order Limits there will be wake effects which will impact Project One', and provided a 'conservative estimate' that Project Two may increase wake losses on Project One by approximately 40%. The Project One Companies requested that a buffer zone around Project One was secured, within which 'Project Two would have to seek approval for any turbine installation'. The scale of the buffer is not specified and it was stated that it would be agreed via a confidential cooperation agreement or Protective Provisions between the parties.

In this regard, the Applicant notes that the boundaries of the Hornsea Project One and Hornsea Project Two developments are contiguous, which is not the case for the Morgan Generation Assets and the Ørsted IPs projects. The Applicant also notes that the 40% figure is considerably greater than the figures provided by the Ørsted IPs in relation to the Morgan Generation Assets. In addition, the Applicant notes that this concern was not raised during the Hornsea Project Two Examination beyond Deadline 3, where it was stated in the Summary of Oral Case for ISH 15 dated September 2015<sup>2</sup> that 'that all matters between the Project and Hornsea Project One have now been agreed'. Similarly, the Statement of Common Ground<sup>3</sup> between Hornsea Project Two and Hornsea Project One dated September 2015 states, in relation to wake loss, that 'The Projects are satisfied that this commercial issue is no longer an area of objection in relation to Project Two's DCO examination' and that 'The Project One Companies hereby withdraw their representations regarding potential wake loss impact'.

The Applicant highlights, based on as-built data publicly available from Oceanwise, that the distances between the as-built wind turbines of Hornsea Project Two and Hornsea Project One at the boundary are within the ranges seen for 'within project' separation distances (i.e. there is no buffer apparent between Hornsea Project One and Hornsea Project Two), with the closest distances at 1,280 m (western boundary), 1,157 m (northwestern boundary) and 1,165 m (northern boundary) (see Figure 1.1). This is significantly closer than the closest separation distance between the Morgan Generation Assets and the nearest Ørsted IPs project (8.1 km at its closest point). It is therefore assumed that the distances proposed by Hornsea Two were sufficient to resolve the concerns raised by the Project One Companies regarding wake losses, energy production and long term business case for the project, based on a far greater percentage impact than that being put forward by the Ørsted IPs for the Morgan Generation Assets.

- **Hornsea Three and Hornsea Four:** The Applicant notes that no concerns in relation to wake effects or the need for buffer zones were raised in the applications or Examination material for subsequent adjacent projects in the

<sup>1</sup> [https://webarchive.nationalarchives.gov.uk/ukgwa/20180612192521mp\\_/https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010053/EN010053-000978-Dong%20Energy%204.pdf](https://webarchive.nationalarchives.gov.uk/ukgwa/20180612192521mp_/https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010053/EN010053-000978-Dong%20Energy%204.pdf).

<sup>2</sup> <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010053/EN010053-001078-DONG%20Summary%20of%20Oral%20Case%20%20Issue%20Specific%20Hearing%2015%20Appendix%201%20.pdf>.

<sup>3</sup> [https://webarchive.nationalarchives.gov.uk/ukgwa/20180612193021mp\\_/https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010053/EN010053-000647-Appendix%20A\\_Statement%20of%20Common%20Ground%20with%20Hornsea%20Project%20One.PDF](https://webarchive.nationalarchives.gov.uk/ukgwa/20180612193021mp_/https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010053/EN010053-000647-Appendix%20A_Statement%20of%20Common%20Ground%20with%20Hornsea%20Project%20One.PDF).

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Hornsea Zone (i.e. Hornsea Three or Hornsea Four). Within the layout principles for Hornsea Four, Principle 9 states that ‘The minimum separation distance between the Hornsea Four Array area and Hornsea Project Two Offshore Wind Farm array area will be no less than 2.2 nm as measured from the centre-point of WTGs’ (see Table 1, page 5, within Ørsted, 2021). The Applicant notes that 2.2 nm is 4.07 km.

- **Mooir Vannin:** The Applicant notes that the Mooir Vannin project has refined its project boundary prior to consent application (see Figure 5 in S\_D5\_3.1 Annex 3.1), however, the project has not mitigated its Scoping Boundary to increase the distance between the proposed and existing assets, suggesting that wake effects on these existing assets are not a planning concern that requires any consideration or further action for Ørsted.

1.3.1.2 In summary, none of the Ørsted projects brought forward under The Planning Act 2008 have undertaken a quantified wake effects assessment as part of their Environmental Impact Assessment as Ørsted are suggesting should be the case for the Applicant’s project. The Applicant does not contest that private voluntary agreements may have been reached between projects that Ørsted have brought forward, but there is no evidence to suggest mitigation has been required to address wake effects.

1.3.1.3 The NPS paragraphs relied on by the Ørsted IPs as justifying a wake assessment are in the same terms as the provisions set out in the 2011 NPS. If the effect of those provisions was to require any new offshore wind farm development to assess wake loss effects on existing wind farms, that would have become a well-established practice in the industry by this point. That is simply not the case. The limited circumstances referred to above relate to projects in far closer proximity that in this application and, even in those limited instances that the Ørsted IPs rely on, the discussion of wake loss was minimal through the consenting process. The relevant NPS policies have not historically been considered to require wake assessment and there is no basis for a change in interpretation now.

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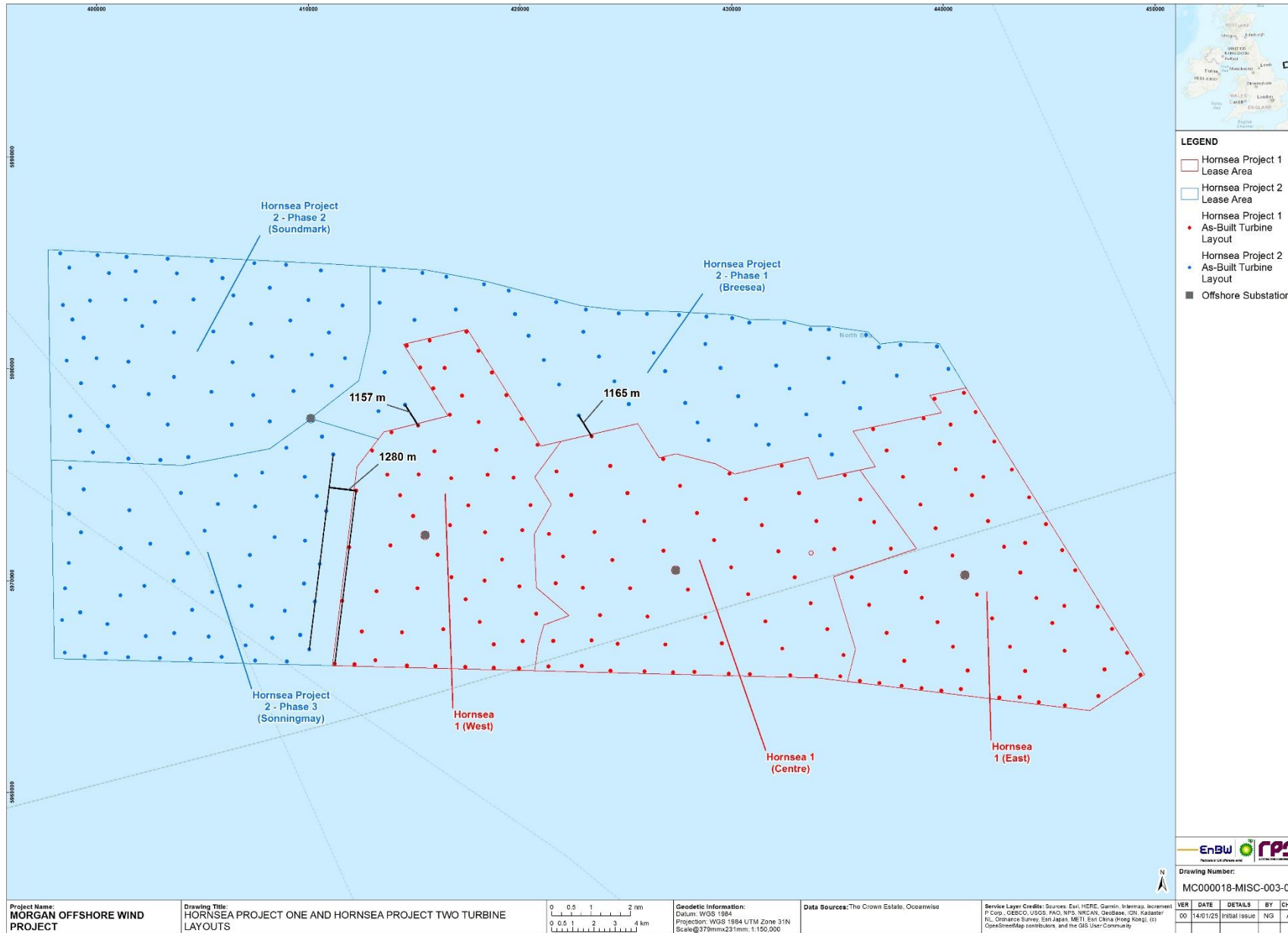


Figure 1.1: Hornsea Project One and Hornsea Project Two as-built wind turbine layouts.



## 2 REFERENCES

DONG Energy Burbo Extension (UK) Ltd. (2013) Burbo Bank Extension Offshore Wind Farm, Environmental Statement, Volume 2 - Chapter 23: Other Infrastructure and Licenced Activities, Available at:

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