Partners in UK offshore wind

MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Annex 4.11 to Response to Hearing Action Point HAP_ISH1_25: Applicants response to Wake Loss

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Image of an offshore wind farm

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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 Array Area	The area within which the wind turbines, foundations, inter-array cables, interconnector cables, scour protection, cable protection and offshore substation platforms (OSPs) forming part of the Morgan Offshore Wind Project: Generation Assets will be located.
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).
The Planning Inspectorate	The agency responsible for operating the planning process for applications for development consent under the Planning Act 2008.

Acronyms

Acronym	Description
DCO	Development Consent Order
EIA	Environmental Impact Assessment
IP	Interested Parties
ISH	Issue Specific Hearing
NPS	National Policy Statement
PDA	Project development areas
PEIR	Preliminary Environmental Information Report
TCE	The Crown Estate
UK	United Kingdom

Units

Unit	Description
GW	Gigawatt

1 ANNEX TO RESPONSE TO HEARING ACTION POINTS: HAP_ISH1_25 WAKE LOSS 1

1.1 Introduction

1.1.1.1 This document has been prepared in response to Action Point 25 arising from the Issue Specific Hearing 1 (ISH1) which was held on 10 September 2024 in respect of the Morgan Offshore Wind Project: Generation Assets (hereafter Morgan Generation Assets).

1.1.1.2 Morgan Offshore Wind Ltd. ('the Applicant') has reviewed each of these action points.

1.1.1.3 Action Point 25 is set out in the ISH 1 Action Points (document reference EV2-005) and requires the Applicant to:

Respond to the Orsted IP's comments at the hearing in relation to wake effects, the policy support for undertaking a wake effects assessment, and the availability of the data to feed into such an assessment.

1.2 Response

1.2.1.1 For the reasons set out below, the Applicant does not consider that there is a legal or policy basis for a wake effects assessment to be required as part of the consideration of the DCO application for the Morgan Generation Assets.

1.2.1.2 The Applicant also considers that, even if such an assessment was required, the data needed is not available and there is no robust and recognised approach for such an assessment.

1.2.2 Net zero target

1.2.2.1 The proposed development, by the nature of its purpose, is to generate clean green energy to help the UK reach its net zero target by 2050. The Crown Estate's Round 4 offshore wind portfolio across the UK seeks to deliver around 8 GW of new offshore wind projects by the end of the decade. This is enough to power more than seven million homes and deliver the step-change in the UK's journey to net zero by 2050. NPS EN-1 recognises that this target will need a dramatic increase in the volume of new large-scale energy development, which will not be possible without some level of residual impacts (paras 3.1.1 and 3.1.2). For Critical National Priority infrastructure, such as the Morgan Generation Assets, the starting point is a presumption that the need outweighs the residual effects in all but the most exceptional cases (para 4.1.7). NPS EN-3 encourages developers to maximise the capacity of new large-scale energy development within technological, environmental and other constraints (EN-3 para 2.8.2).

1.2.2.2 To the extent that new large-scale energy development results in minimal energy loss for operational projects, the Applicant submits that the considerable net benefit delivered by the new development should be afforded very great weight in the planning balance.

1.2.2.3 The Applicant acknowledges Orsted IPs' concerns about energy loss. However, the Applicant considers that this issue must be viewed and balanced in terms of the significant positive contribution of the Morgan Generation Assets to support the net zero target by 2050.

1.2.2.4 For the reasons set out in more detail below, the Applicant considers that it has met the requirements within the NPS and the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the "EIA Regulations"), and that no further information is required to be provided as part of the DCO application for the Morgan Generation Assets.

1.2.3 Policy basis and EIA guidance for wake modelling

1.2.3.1 The core purpose of the EIA process and the reporting within an Environmental Statement is to set out the likely significant effects on the environment from a proposed development. This allows Interested Parties to participate in the consent process and enables the Secretary of State to make an informed decision on the application. An Environmental Statement is required to assess and report on the various factors set out in reg.14 and sch.4 of the EIA Regulations. The content of an Environmental Statement will also be informed by guidance published by relevant industry and professional bodies, and policy requirements set out in the NPS.

1.2.3.2 The Applicant does not consider that potential energy loss of existing operational wind farms to be a matter that requires to be assessed and reported on within an Environmental Statement. The Applicant does not consider this to be within the scope or requirements of the EIA Regulations. It is notable that there is no published guidance by industry or professional bodies that suggests such an assessment is required, or how such an assessment would be undertaken.

1.2.3.3 In respect of the NPS, the Applicant considers that on a proper reading of the NPS as a whole, it is clear that a 'wake assessment' is not required.

1.2.3.4 NPS-EN-1 sets out the urgent need for new large-scale renewable energy projects, recognising that it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts (para 3.1.1 and 3.1.3). The NPS directs developers to minimise effects in accordance with the policy set out in Part 4 and Part 5 of EN-1 and the technology specific NPS.

1.2.3.5 EN-3 paragraph 2.5.2 sets out that proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence/co-location with other marine (and terrestrial) uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage. EN-3 goes on to set out what applications for specific technology types should consider.

1.2.3.6 Paragraph 2.8.2 directs all offshore wind developments to maximise their capacity within the technological, environmental, and other constraints of the development. EN-3 recognises that offshore wind development will occur in or close to areas where there is other offshore infrastructure (para 2.8.196 and 2.8.197) and that there is potential for adverse impacts on those activities as a result.

1.2.3.7 The key tests for the Secretary of State to consider are:

- Whether they can be satisfied that the risk to other industries has been reduced to as low as reasonably practicable (para 2.8.344); and
- That site selection and site design has been undertaken with a view to avoiding or minimising disruption or economic loss or any adverse effect on safety to other offshore industries (para 2.8.345).
- Where a proposed development is likely to affect the future viability or safety of an existing or approved/licensed offshore infrastructure or activity, the Secretary

of State should give these adverse effects substantial weight in its decision-making (paragraph 2.8.347).

1.2.3.8 The Secretary of State is directed to take a pragmatic approach when considering such impacts (para 2.8.343).

1.2.3.9 The Applicant considers that this is informative of when an assessment of impacts on other industries should be undertaken and its scope. The Applicant considers that the detail presented within Volume 2, Chapter 9: Other sea users (APP-027) provides the necessary level of detail to allow the Secretary of State to be satisfied of the Applicant's compliance with the key tests set out in EN-3. A summary of the key aspects of siting and design undertaken by the Applicant in line with the NPS guidance is set out below.

1.2.3.10 Further, as noted above, there is no policy or offshore wind farm EIA guidance prescribing the process by which to scope in and assess, in EIA terms, the operational effects of one offshore wind farm's wind distribution (a resource which is not guaranteed and cannot itself be leased or apportioned) on a neighbour for all stages of the lifespan of the proposed wind farm (para 2.8.198).

1.2.4 Leasing process

1.2.4.1 The need to balance competing interests, whilst achieving the overarching policy aims for offshore wind development in the UK was recognised by TCE in setting the parameters for the Round 4 Lease Areas. This is also set out in the study prepared for TCE by Frazer-Nash Consultancy Limited (2023), which states: '*TCE wishes to designate offshore wind project development areas (PDAs) to maximise the energy production from the portfolio of existing and future wind farms, whilst balancing environmental and other requirements*.'

1.2.4.2 Within their leasing process, TCE required a separation distance of 7.5 km between Round 4 developments and existing offshore wind farm infrastructure. TCE took account of minimising impacts on other licensed activities in identifying this distance and specified that no Round 4 offshore wind project could be located within 7.5 km of an existing offshore wind farm, unless the owner of the existing offshore wind farm had given its written consent (TCE, 2019). This ensures that any likely project interactions are managed between the two leaseholders. Beyond this no consent or approval from any existing operators is needed. No approval from any existing operating wind farms is required for the Morgan Generation Assets.

1.2.5 Project refinement

1.2.5.1 Further to meeting TCE's spacing criterion, the Applicant during the pre-application phase has taken the steps required by the relevant NPS policy to further minimise potential impacts. The Morgan Array Area was reduced following receipt of statutory pre-application consultation responses on the Preliminary Environmental Information Report (PEIR). This is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives (APP-011) and Volume 2, Chapter 9: Other sea users (APP-027).

1.2.5.2 Post-consent the Applicant will go through the final design process, which may include refinement of number of wind turbines, refinement of wind turbine spacing and refinement of wind turbine position within the Morgan Array Area (in accordance with the layout principles set out in Table 3.7 of the Project description chapter (APP-010)), following the completion of detailed site investigation campaigns and selection of wind turbine model through a competitive procurement process.

1.2.6 Wake loss assessment

1.2.6.1 The suggestion from the Orsted IPs that a wake loss assessment could be undertaken on the basis that existing wind farms coordinates and turbine models are available, that there are software models available for this assessment and that the Applicant has internal data about the layout for the Morgan Generation Assets, is not supported by legislation or policy. In addition, for the reasons given above, such an assessment could not be undertaken to provide a meaningful or reliable assessment that any weight could be safely be placed on in the determination of the Morgan Generation application.

1.2.6.2 In order for such an assessment to be undertaken the following is required:

- The final Morgan array layout with as built number and dimensions of the turbines, as well as the turbine make and model.
- Confidential/ commercially sensitive information on the current operating performance of the Orsted wind farms, including the effects of internal wake effects and those from other operational and proposed wind farms (noting the distance between Walney Extension and West of Duddon Sands is 0.2 km), blockage and any grid curtailment, planned and unplanned outages.
- Agreed meteorological parameters including atmospheric stability, turbulence intensity, wind speed and height of the boundary layer.
- A publicly available and industry validated software model that can be accessed by both organisations to both model and check outputs.
- An approach to assessment that accords with IEMA guidance and ensures a robust analysis of the relevant baseline, and assessment and transparent evaluation of impact significance both alone and cumulatively with other existing and proposed projects, and an effective means of mitigating and managing significant effects.

1.2.6.3 None of these data are available to be able to provide a meaningful, reliable and transparent assessment. Further to this, there is no EIA process in which it could be considered.

2 References

TCE, 2019. Information Memorandum Introducing Offshore Wind Leasing Round 4 September 2019 Correct as of September 2019, unless otherwise stated. 38255-TCE-DOC-016