SHEPHERD+WEDDERBURN

RESPONSES TO THE FIRST WRITTEN QUESTIONS OF THE EXAMINING AUTHOITY ON BEHALF OF

(1) BARROW OFFSHORE WIND LIMITED (REF: 20049974) (2) BURBO EXTENSION LTD (REF: 20049975) (3) WALNEY EXTENSION LIMITED (REF: 20049977) (4) MORECAMBE WIND LIMITED (REF: 20049973) (5) WALNEY (UK) OFFSHORE WINDFARMS LIMITED (REF: 20049978) (6) ØRSTED BURBO (UK) LIMITED (REF: 20049976) (THE "ØRSTED IPs")

IN CONNECTION WITH THE Application by Morecambe Offshore Wind Limited for an Order Granting Development Consent for the Morecambe Offshore Wind Farm

1. Introduction

1.1 This submission is provided in accordance with Deadline 3 of the examination timetable for the application by Morecambe Offshore Windfarm Limited (the "**Applicant**") for an Order under the Planning Act 2008 (the "**Act**") granting Development Consent for the Morecambe Offshore Windfarm Generation Assets (the **"Project**").

1.2 We represent six owners of operational offshore windfarms in the East Irish Sea (as set out relevant representations RR-008, RR-014, RR-056, RR-088, RR-089, RR-093), who we refer to together as the "**Ørsted IPs**" for the purposes of this submission.

1.3 This document contains the Ørsted IPs' responses to the fist written questions of the examining authority ("**ExQ2**") (set out in the table overleaf). The Ørsted IPs have responded to the following questions, which have been directed towards them:

1.3.1 1GEN1;

1.3.2 1OOI1

1.3.3 1OOI2;

1.3.4 1OOI3;

1.3.5 1OOI4; and

1.3.6 1OOI5.

Shepherd & Wedderburn LLP

22.01.2024

Q ref	Question	Answer
1GEN1	**Decommissioning dates** Table 5.1 of the Applicant's response to Actions from PM and ISH1 [REP1-086] sets out the distances and expected decommissioning dates for various windfarms in the vicinity. This indicates that the Barrow OWF is due to be decommissioned "by 2030". In their WR the Ørsted IPs [REP1-112] indicate that they are not aware of any requirement for additional consents or licences to continue operating this development beyond 2030. To Barrow Offshore Wind Limited a) Could Barrow Offshore Wind Limited please set out its understanding of the timing of its decommissioning processes, providing evidence to support this. The draft SoCG between the Applicant and the Ørsted IPs [REP1-073] indicates that the Applicant believes that a new Marine Licence would be required post 2030. To the MMO c) Could the MMO please confirm its understanding of the Marine Licensing situation concerning this site, with particular reference to any end date or decommissioning requirements	Barrow Offshore Windfarm primarily operates under a consent under Section 36 of the Electricity Act 1989. Operation of the windfarm is not subject to any specific time limits under the Section 36 consent it holds nor any marine licences it holds. Ørsted enquired with the Secretary of State regarding whether (relevantly) Barrow Offshore Windfarm and Burbo Bank Offshore Windfarm would require variation to continue the operational lifetime of those developments. The Secretary of State responded that *"…the Secretary of State has not found anything which would lead him to conclude that the consents for which he is the competent authority require variation or the supply of additional consents, licences or permissions to secure the Secretary of State's approval to enable the continued operation of the wind farms."* This letter is attached as **Appendix 1**. Barrow Offshore Windfarm does not require any marine licences in order to operate, although there is a maintenance licence in place for the repair and replacement of main components. On that basis, the Ørsted IPs do not consider further consents are required to authorise the operation of the Barrow Offshore Windfarm beyond 2030. The Applicant has incorrectly assumed that this development will be decommissioned in 2030. 2030 is the earliest expected decommissioning date for Barrow Offshore Windfarm and is not driven by any factors pertaining to the consents that the project holds. The actual decommissioning date is not confirmed and Ørsted will make a decision on this closer to the time, based on a number of factors including production, OPEX costs and revenue projection. It is within the interests of Barrow Offshore Windfarm to explore and pursue the possibility of continued operations past 2030, enabling continued contribution to the UK's net-zero carbon energy targets and enhancing project circularity through achieving greater value out of the same resources already in operation. Furthermore, we note that both the UK government and the Crown Estate have published reports (Clean Power 2030 Action Plan and 2023 annual report respectively) indicating strong support for lifetime extension. This is explained further in the Ørsted IPs' response to Deadline 2 submissions, provided alongside this submission.
1OOI1.	**Potential Wake Effects** Table 17.10 of ES Chapter 17 [REP1-038] identifies the approximate distances between the Proposed Development and other offshore wind projects including proposed and operational wind farms. At Deadline 1, in response to the Action Points for ISH1, the Applicant submitted further details including the orientation, hub	In respect of question (b), the Ørsted IPs confirm the distances between the Project and their developments are approximately correct. The Ørsted IPs consider there are some discrepancies in respect of the hub heights and other information provided in table 5.1 and will work with the Applicant to update these figures via their statement of common ground. The Ørsted IPs note table 5.1 also records expected decommissioning dates for their assets. These dates are not correct. The earliest expected decommissioning dates for these assets are shown in the table below. However, the Ørsted IPs emphasise these dates are highly conservative. Experience to date

	height and blade tip height of other offshore wind projects in the Irish Sea (Table 5.1 of [REP-1-086]). <u>To the Applicant:</u> a) Having regard to the orientation, wind direction and distance between the Proposed Development and the Mona Offshore Wind Project (10.56km to the WSW) as shown in Table 5.1 and Figure 5.1 of [REP-1-086] does the Applicant have any concerns regarding the potential impact of wake loss from that proposal on the Proposed Development? If not, please explain why this is the case? <u>To the other IPs:</u> b) Do the other referenced IPs agree that Table 5.1 accurately reflects the approximate distances, orientation and heights as provided by the Applicant? If not, please can the parties provide a similar table which shows the same information as it considers to be correct. c) Noting the distance between the proposed Mooir Vannin and existing Walney Extension OWF (as shown Table 5.1 and Figure 5.1 of [REP-1-086]), do the Ørsted IPs have concerns about potential wake loss effects from the Mooir Vannin proposal and, as the proposed operator of that project, can the parties confirm whether a wake loss assessment has been scoped in as part of the EIA for that application? If not, please can the parties explain why such an assessment is not considered necessary in that case?	suggests there is a high potential for life extension of the assets. Decisions regarding lifetime extensions of these assets will be made closer to the time, based on a range of factors. In terms of assessing the environmental impacts of the Project it would be incorrect to assume that these assets will cease to operate at the earliest expected decommissioning dates, when there is no restriction requiring that. Such an approach would, in particular, risk cumulative effects of the Project being incorrectly assessed. A more appropriate way of approaching the worst case scenario would be to assume 10 year lifetime extension at all assets. **Table 1:** Expected earliest decommissioning date of the Ørsted IPs' developments, not including lifetime extension which the Ørsted IPs do not expect to require additional consent. **Ørsted IPs developments** / **Earliest decommissioning date** Burbo Bank 1 — Dec 2031 Burbo Bank 2 (Extension) — May 2041 Barrow — Sep 2030 Walney — Walney 1 — Jul 2035 Walney — Walney 2 — Jun 2036 Walney Extension — Walney 3 (extension) — May 2042 Walney Extension — Walney 4 (extension) — May 2042 West of Duddon Sands — Oct 2038 In respect of question (c), the Ørsted IPs will continue to evaluate their position in respect of the Mooir Vannin project and will raise the issue of wake loss with the developer of that project if necessary. Given Mooir Vanin is at a much earlier stage of development, with consent applications not expected to be lodged until Spring 2025, the precise design of the project is uncertain. Consequently, the Ørsted IPs are not currently focussing on it. Instead, the Ørsted IPs have focussed on the Project, as well as the Mona and Morgan projects because they are considerably progressed in the examination process and because the applicants or all three projects have consistently failed to engage meaningfully on this issue. As a result, the Ørsted IPs have had no choice but to raise this issue in the examinations, and in light of the applicants' failures to assess wake loss, the Ørsted IPs have been forced to commission an assessment of those projects effects themselves.

		The Ørsted IPs note that they are separate entities to Mooir Vannin and are not the proposed operator of that project, although it is acknowledged they are owned by the same parent company. However, it is the Ørsted IPs' understanding that Mooir Vannin Offshore Wind Farm Limited has undertaken a wake loss assessment and will be entering discussions with them.
1OOI2.	**Potential Wake Effects: Wood Thilsted Partners Ltd Report – Installed capacities of Ørsted projects** Section 1, Table 2-1 and Table 5-3 of the Wood Thilsted report [REP2-041] identify each of the Ørsted operational windfarms and provide information including the rated power of turbines used, number of turbines within each project and their installed capacity. Walney Extension is cited as having a capacity of 659MW within Section 1 and Table 5-3 and in Table 2-1 this project is broken down into two separate phases (i.e. Walney 3 and Walney 4) with installed capacities assigned to each phase which combined total 661MW. Different capacities are also cited for Burbo Bank Extension within section 1 of the report (i.e. 256MW), Table 2-1 (i.e. 265.6MW) and Table 5-3 (i.e. 258MW). a) Why has the information for Walney Extension been provided as individual phases rather than as a single project? b) Please check and confirm that the total installed capacities for Walney Extension and Burbo Bank Extension are correct and that the correct baseline capacities have therefore been used in the assessment and that the results within Table 5-4 and Table 5-5 are accurate. Please provide updated tables (if necessary).	In response to question (a), Walney 3 and Walney 4 are separate phases of the Walney Extension project. As Walney 3 and Walney 4 have different turbine technology and separate transmission systems they are modelled independently. This has been clarified in the latest version of the wake report, which is provided alongside this submission. In response to question (b), it is confirmed that the installed capacities of Walney Extension is 659MW and Burbo Bank Extension is 256MW. These figures have been corrected in the latest version of the Wake Report which is provided alongside this submission. The Ørsted IPs' note that this correction to the reporting is superficial in nature and has not impacted the results of the assessment.
1OOI3.	**Potential Wake Effects: Wood Thilsted Partners Ltd Report – Tables 5.4 and 5-5** Tables 5-4 and 5-5 provide a summary of the results of the wake loss assessment for each of the main scenarios on each of the Ørsted IPs windfarms. In addition to any	(a) The Orsted IPs have deliberately not disclosed the expected energy loss in MWh as this would reveal the internal view of the expected annual energy yield for each asset. This is commercially sensitive information. UK Government is currently considering creating market mechanisms for older projects, the disclosure of such information would also not be appropriate in that context. However, a conservative view could be achieved by using the installed capacities of each wind farm alongside average

corrections required as result of the Ørsted IPs response to ExQ1OO12 above, please can the Ørsted IPs update Tables 5-4 and 5-5 to include additional columns that:

a) identify what the percentage losses cited equate to in terms of total energy loss (in MW) for each scenario and windfarm affected each year;

b) taking into account the answer to (a), what the overall total energy loss (in MW) would be for each windfarm having regard to the consented/ remaining operational life of each of those projects.

c) having regard to the electricity sale price agreed in relation to each of those projects, the remaining life of those projects and overall total energy loss identified (as identified in the response to (b)) what would the financial consequences of such wake losses equate to for each of these projects?

capacity/load factor for offshore wind. Recently, the applicant in the Mona Offshore Windfarm examination utilised OFGEM figures giving the calculated capacity factors relating to historic energy production at the Orsted IPs assets, in a technical note produced for the purposes of calculating the net GHG impact of that Project. While the Orsted IPs do not consider this figure provides an accurate representation of future loss, these capacity factors can be utilised to provide a ballpark estimate of potential energy loss as shown in the tables below. Calculation formula for indicative quantified energy loss: Quantified Energy Loss per annum (kWh) = Project capacity (kW) * Capacity factor * Hours in a year (8766h) * Wake loss percentage. The following indicative annual energy losses for each Ørsted IP is presented below for both the Morecambe alone impacts and cumulatively with the proposed Mona and Morgan developments.

Morecambe only

	Installed capacity (MW)	Implied capacity factor (%)	Wake Loss Percentage (%)	Indicative annual quantified energy loss (MWh)
Barrow	90	34%	-1.37%	-3,675
Walney 1	183.6	39%	-0.53%	-3,327
Walney 2	183.6	44%	-0.32%	-2,266
Walney Extension 3	330	45%	-0.40%	-5,207
Walney Extension 4	329	45%	-0.56%	-7,268
West of Duddon Sands	388.8	43%	-1.01%	-14,802
Burbo Bank	90	32%	-0.46%	-1,161
Burbo Bank Extension	256	40%	-0.45%	-4,039
			Total	-41,745

Cumulative

	Installed capacity (MW)	Implied capacity factor (%)	Wake Loss Percentage (%)	Indicative annual quantified energy loss (MWh)
Barrow	90	34%	-3.09%	-8,289
Walney 1	183.6	39%	-3.78%	-23,726
Walney 2	183.6	44%	-3.69%	-26,131
Walney Extension 3	330	45%	-4.13%	-53,762
Walney Extension 4	329	45%	-5.21%	-67,616
West of Duddon Sands	388.8	43%	-3.86%	-56,570
Burbo Bank	90	32%	-1.63%	-4,115
Burbo Bank Extension	256	40%	-1.84%	-16,517
			Total	-256,725

b) The annual energy loss calculated above would then apply for each year of the projects remaining life post construction of the asset(s) causing the wake. As previously indicated the remaining lifetime of the projects is not a defined value and Orsted A/S have stated that the remaining lifetime of the affected assets may be impacted by the wake as a result of the Applicants development. In this case it would be the entire production of the wind farm that would be lost.

The Orsted IPs note that there are no additional consents required to extend the lifetime as suggested by the question.

		c) The Ørsted IPs revenues are a mix of fixed and variable sources such as Contract for Difference ("CfD") or Renewable Obligation Certificates ("ROC"), and revenues coming from power trading. Calculating the financial consequences from wake loss is therefore complex and commercially sensitive. However, Ørsted will investigate how to submit a robust assessment of the financial impact using public sources for a later submission.
1OOI4.	**Potential wake effects – NPS EN-3 paras 2.8.200 and 2.8.344** Paragraph 2.8.200 of NPS EN-3 states *"Applicants should engage with interested parties in the potentially affected offshore sectors early in the pre-application phase of the proposed offshore wind farm, with an aim to resolve as many issues as possible prior to the submission of an application".* Paragraph 2.8.344 adds *"…the Secretary of State should expect the applicant to work with the impacted sector to minimise negative impacts and reduce risks to as low as reasonably practicable".* Noting the Ørsted IPs position and disagreement within the SoCG submitted at Deadline 1 [REP1-073]: a) can the Ørsted IPs confirm if/ when concerns about potential wake loss effects were first identified and raised with the Applicant during the pre-application stage? b) can the Applicant explain how it has worked with the Ørsted IPs (and any other operators of existing OWFs in the Irish Sea) to minimise negative impacts on energy yield since these concerns were first raised?	The Ørsted IPs raised the potential for wake loss as an issue in their section 48 consultation responses in June 2023. It is recorded in the Applicant's consultation report [APP-015] that the Ørsted IPs raised energy yield as a concern during the section 42 consultation process. It was noted in respect of this issue that the Ørsted IPs considered there was potential for Project turbines to interfere with wind speed or wind direction at their developments and thus cause a reduction in energy output at their developments. The Ørsted IPs sought that the issue be properly assessed, appropriate mitigation applied with any remaining adverse effects appropriately compensated.
1OOI5.	**Potential Wake Effects – NPS EN-3 para 2.8.342** Having regard to paragraph 2.8.342 of NPS EN-3 which advises the SoS to employ "… *a pragmatic approach ..."*	(a) The Ørsted IPs' goal in raising this issue in the examination process, is that the Applicant will be encouraged to comply with its obligations under the NPS-EN3 to properly assess the impacts of

	where a proposed offshore wind farm potentially affects other offshore infrastructure or activity. <u>To the Ørsted IPs</u> a) Can the Ørsted IPs please set out what outcome they seek from this Examination in relation to wake effects? <u>To the Ørsted IPs and the Applicant</u> b) Could there be any role for Protective Provisions or a commercial side agreement or in the event that no wake assessment is undertaken during the Examination? c) Would both the Applicant and the Ørsted IPs comment whether a requirement along the same lines of Requirement 25 of The Awel y Mor Offshore Wind Farm Order 2023 (requiring such an assessment postconsent) would be justified and would meet the relevant legal and policy tests	the Project on energy yield at the Ørsted IPs' developments. Following such an assessment, the Ørsted IPs seek that the Applicant propose mitigation solutions to reduce the likely wake impacts at their developments and to provide compensation for any residual adverse effects. If that is not possible by the close of this examination, the Ørsted IPs consider it would be necessary to impose DCO requirements requiring those steps to take place. (b) The Ørsted IPs consider a commercial side agreement could be utilised in resolving their concerns in respect of the Project. The Ørsted IPs understand that this is an issue which is regularly dealt with by applicants and incumbent developers - often resolved through negotiation. Other applicants have engaged with impacted sea users on this effect, assessed the effect and either demonstrated the effect is immaterial or provided appropriate mitigation, such that examination of the issue in an examination or the imposition of a DCO requirement has not been necessary. (c) The NPS EN-3 requires that, where a potential offshore wind farm is proposed close to existing operational offshore infrastructure or has the potential to affect activities for which a licence has been issued by government, the applicant should undertake an assessment of the potential effects of the proposed development on such existing or permitted infrastructure or activities. Additionally, policy NW-CO-1 of the North West Marine Plan provides that proposals which "*incorporate opportunities for co- existence and cooperation with existing activities will be supported*." Proposals that may have significant adverse impacts on existing activities must demonstrate that they will avoid, minimise and mitigate such adverse effects on an existing activity so they are no longer significant. The Applicant has, in the Ørsted IPs' view, erroneously excluded wake loss effects on the Ørsted IPs' developments from assessment. This is not appropriate, as wake loss has a direct effect on another sea user not simply an effect to be considered through the EIA process. Independent literature as well as modelling commissioned by the Ørsted IPs indicate that the Project will have an impact on energy yield at their developments. This is a matter which must be properly assessed and mitigated by the Applicant. The necessary data and modelling tools are available to allow the Applicant to undertake this assessment. Therefore, there are no practical reasons that would prevent the Applicant from fulfilling a condition that requires such an assessment. In order to comply with the relevant legislative and policy requirements outlined above, and in light of the results of the wake assessment undertaken by Wood Thilsted, the Applicant must cooperate with the Ørsted IPs to agree the potential level of wake effect and examine practical

		mitigation to reduce such effects. In this instance that could include less impactful array layouts. The Applicant must demonstrate the extent of mitigation available. The Ørsted IPs consider this is a matter which should be resolved before a decision is made on the application. This is to ensure decision makers have the necessary information to fulfil the decision-making requirements of the NPS-EN3 and Planning Act 2008. However, if that does not occur, the Ørsted IPs consider a requirement setting out a means by which the wake effects can be taken into account during the final design process would meet the relevant legal and policy tests, as it would manage an effect of the Project and is therefore relevant to planning and the development, and would be necessary because without it, an important effect of the Project would remain unassessed and unaddressed. The Ørsted IPs also consider such a Requirement could be drafted to be enforceable. [Any requirement should be based on an understanding of the effect that it is seeking to mitigate or offset. In addition, any residual effects post-mitigation should be understood. Any requirement cannot make up for a lack of assessment nor a failure to properly account for relevant information in the decision-making process.

Appendix 1 – BEIS letter (provided separately)