

**Infrastructure Planning
Planning Act 2008
The Infrastructure Planning (Examination Procedure) Rules 2010**

Dogger Bank South Offshore Wind Farms – DCO Application

Issue Specific Hearing 3 on Offshore Environmental Matters

Post Hearing Submissions (including written submissions of oral case)

of

the Ørsted IPs

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1. INTRODUCTION

- 1.1 This document summarises the main oral submissions made by Hornsea 1 Limited, the collective of Breesea Limited, Soundmark Wind Limited, Sonningmay Limited and Optimus Wind Limited (together, the “**Hornsea 2 Companies**”), Orsted Hornsea Project Three (UK) Limited, Orsted Hornsea Project Four Limited, Lincs Wind Farm Limited, Westernmost Rough Limited and Race Bank Wind Farm Limited (together or in any combination, the “**Ørsted IPs**”) at Issue Specific Hearing 3 (**ISH3**) dealing with Offshore Environmental Matters held on 8 April 2025, in relation to the application for development consent for the Dogger Bank South Offshore Wind Farms (the “**DBS Project**”) by RWE Renewables UK Dogger Bank South (West) Ltd and RWE Renewables UK Dogger Bank South (East) Ltd (the “**Applicants**”).
- 1.2 ISH3 was attended by the Examining Authority (the “**ExA**”), the Applicants and a number of Interested Parties, including the Ørsted IPs.
- 1.3 This document does not purport to summarise the oral submissions of parties other than the Ørsted IPs, and summaries of submissions made by other parties are only included where necessary in order to give context to the Ørsted IPs’ submissions in response.
- 1.4 Numbered items referred to are references to the numbered items in the agenda published by the ExA on 28 March 2025 [**EV8-001**] (the “**Agenda**”). The Ørsted IPs made oral submissions under Agenda items 1 and 4 only. Where post hearing notes have been added, those notes are prefixed with “Post Hearing Note” and set out in italics for clarity.
- 1.5 The Ørsted IPs also note that Deadline 4 of the examination affords an opportunity for Interested Parties to comment on submissions made by the Applicants at Deadline 3 – for the Ørsted IPs, this would constitute comments on the Applicants’ Responses to ExQ1 [**REP3-027**]. However, the Ørsted IPs consider that the points they would wish to make in relation to the Applicants’ submissions (without simply repeating the submissions made by the Ørsted IPs at Deadlines 1 and 3 of the examination – and, indeed, the Ørsted IPs’ position remains as set out in those submissions) are captured in the summary of oral submissions and post hearing notes below.
- 1.6 The only exception to the approach set out in paragraph 1.5 above is that the Ørsted IPs wish to take this opportunity to provide an update on the negotiations between the Applicants and Orsted Hornsea Project Four Limited in relation to the draft Heads of Terms for a cooperation agreement between the parties. These negotiations are progressing smoothly, with the Heads of Terms largely agreed, meaning that the parties are now proceeding to the drafting of the full agreement.
- 1.7 Therefore, this document comprises the Ørsted IPs’ only submission for Deadline 4.

2. WRITTEN SUMMARY OF THE ØRSTED IPS' ORAL SUBMISSIONS

Agenda Item	Ørsted IPs' Oral Submissions and Post Hearing Notes
Item 1	
Welcome, introductions, arrangements for the Hearing	Alex Tresadern, for the Ørsted IPs , did not make any substantive submissions in relation to this agenda item, other than to introduce the Ørsted IPs.
Item 4	
Infrastructure and Other Users <ul style="list-style-type: none"> Wake loss. 	<p>The ExA asked the Ørsted IPs and the collective of Dogger Bank Offshore Wind Farm Project 1 Projco Limited, Dogger Bank Offshore Wind Farm Project 2 Projco Limited and Dogger Bank Offshore Wind Farm Project 3 Projco Limited (together the “Projcos”) whether the Applicants have worked with the Ørsted IPs and the Projcos to minimise negative effects on their assets to as low as reasonably practicable. Following submissions from the Projcos, which the Ørsted IPs are in agreement with, Alex Tresadern, for the Ørsted IPs, responded that the answer to this question is ‘no’ and stated that the Ørsted IPs would be very happy to arrange a meeting with the Applicants to discuss the topic of wake loss, including with regard to assessments and the tried and tested approaches that are routinely employed to ensure adequate protections for waked and waking projects alike. Mr Tresadern stated that the Ørsted IPs have made their position clear in their written submissions in the examination to date regarding the application of National Policy Statements (“NPS”) in respect of wake loss and stressed the Ørsted IPs’ position that the Applicants should commission an independent wake loss assessment. Having acted for the Ørsted IPs throughout the Outer Dowsing Offshore Wind Farm Project examination, Mr Tresadern explained that a similar debate on this matter was had recently during that examination; the Ørsted IPs, from the start of that examination, requested that the Applicant undertake such a wake loss assessment – the Applicant initially refused, before eventually providing its own internal assessment at Deadline 4, which was criticised by the Ørsted IPs and led to the Applicant submitting a third-party assessment at Deadline 5, as had been requested throughout. The delay in doing this reduced the time available for Interested Parties to comment on such assessments (and, indeed, for the Applicant to then respond to such comments) – therefore, Mr Tresadern repeated the Ørsted IPs’ position that an independent wake loss assessment is required and urged the Examining Authority to require the Applicants on this Project to undertake such an assessment at an earlier stage of this examination, to avoid such problems.</p> <p>In response to submissions made by the Applicants in relation to Leasing Round 4 projects and The Crown Estate (“TCE”), Alex Tresadern, for the Ørsted IPs, noted that in the Applicants’ Responses to ExQ1 [REP3-027], notably IOU 1.12, the Applicants assert that “<i>the resolution to this issue [that being wake loss] is for the Projcos and Orsted IPs to accept that the question of wake effects was resolved through TCE’s Round 4 leasing process and the 7.5km buffer which was fixed. This approach has been generally accepted by the offshore wind sector, until the wholly unexpected outcome of the Awel y Mor decision</i>”. The Ørsted IPs disagree with the statement that “<i>this approach has been generally accepted by the offshore wind sector</i>” – this assertion cannot apply to Leasing Round 4 projects given that all of them are currently facing wake loss-based DCO objections. An understanding of the true extent of far-field wake effects (i.e. their extension significantly beyond the 5/7.5km buffers imposed in the Leasing Round 4 process) was only beginning to emerge (from Ørsted’s perspective) after those 5/7.5km buffers were established in 2018/19. It was this lack of awareness at the time, rather than the fundamental existence of those buffers, that explains the relative lack of planning disputes prior to the Awel y Mor DCO examination and the Leasing Round 4 projects.</p>

Post Hearing Note: The Ørsted IPs note that the industry understanding of the extent of wake effects has matured considerably since Round 4 leasing. Indeed, Ørsted communicated to the market for the first time on this topic in 2019, warning the market that they had observed wakes persisting much longer than previously assumed. In addition, the Ørsted IPs note that developers have traditionally sought to resolve issues relating to wake impacts outside of the planning process via the established industry norm of reaching commercial agreements.

Further, **Alex Tresadern for the Ørsted IPs**, referred to Appendix 1 of the Ørsted IPs' Responses to the Applicants' Responses to Relevant Representations **[REP1-086]** which comprises TCE's response to a question posed to them by the ExA in the Outer Dowsing Offshore Wind Farm Project examination. In this response, TCE state that it "*acknowledges that inter-farm wake effects can extend beyond those buffer distances [i.e. the 7.5km buffer that was discussed during ISH3]. TCE also notes that the spatial and temporal variability of wind speed means that it is complex to accurately predict the wake impact on nearby wind farms, which may depend upon factors beyond distance – e.g. prevailing wind direction and wind farm layout*". **Mr Tresadern** stated that this is a pertinent quote from TCE themselves on this matter.

Post Hearing Note: The Ørsted IPs note that the same submission from TCE also states that "project-specific analysis" (i.e. a wake loss assessment) is still required.

In relation to wake loss assessments again, **Alex Tresadern for the Ørsted IPs**, referred to the position taken by the Ørsted IPs in the Outer Dowsing Offshore Wind Farm Project examination, which was that some of the Ørsted IPs withdrew their objections in relation to wake loss following adequate wake loss assessments being provided. **Mr Tresadern** noted that such a position could not currently be promised in relation to the present examination, but stated that this is another reason for the Applicants to undertake such an assessment.

The ExA referred to the fact that the Race Bank, Lincs and Westernmost Rough Offshore Wind Farms would be located approximately 134km, 154km and 112km respectively from the proposed array areas of the DBS Project, and asked the Ørsted IPs to explain why they consider that there would be likely effects from wake loss from the DBS Project to these wind farms given the distances involved and evidence provided to date. **Alex Tresadern, for the Ørsted IPs**, confirmed that a full response to this question would be provided in writing, but noted that (pursuant to the Ørsted IPs' submissions in the Outer Dowsing Offshore Wind Farm Project examination) it can be the case that a 'small' AEP impact on an asset can have a significant impact on its financial viability, and that (as previously set out) distance is not the only factor in assessing wake loss impacts.

*Post Hearing Note: The Ørsted IPs note that this comprises Action Point 11 of the ISH3 Action Points **[EV8-010]**. The Ørsted IPs cannot answer this question without a wake loss assessment being undertaken by the Applicants. It may be the case that such an assessment reveals minimal wake loss effects on these assets due to the distances, in which case the Ørsted IPs would consider withdrawing the wake loss objections of these assets (i.e. taking the same approach of certain Ørsted IPs' assets in the Outer Dowsing Offshore Wind Farm Project examination), but in lieu of such an assessment the assets remain part of the Ørsted IPs' portfolio that may suffer wake loss effects as a result of the DBS Project.*

The ExA asked the Ørsted IPs which of their assets are considered to be 'close' to the DBS Project, with reference to paragraph 2.8.197 of NPS EN-3. **Alex Tresadern, for the Ørsted IPs**, confirmed that the Ørsted IPs would respond in writing to this matter.

Post Hearing Note: The Ørsted IPs note that the meaning of the word ‘close’ in the context of paragraph 2.8.197 of NPS EN-3 is not solely defined by physical distance, but also by the effects a development will have on other sea users. Therefore, until the Applicants undertake the requested wake loss assessment, the Ørsted IPs cannot be certain of the effects on their assets and cannot be certain which of their assets are considered to be ‘close’ to the DBS Project in the context of paragraph 2.8.197 of NPS EN-3.

The ExA asked the Ørsted IPs whether they consider that an offshore wind farm would represent an activity for which a licence has been issued by the Government in line with paragraph 2.8.197 of NPS EN-3. **Alex Tresadern, for the Ørsted IPs**, responded that the Ørsted IPs do consider that to be the case and referred to the Ørsted IPs’ previous submissions on this matter, including that existing offshore wind farms are relevant to paragraph 2.8.197 of NPS EN-3, which is a paragraph that should be read together with other relevant paragraphs of NPS EN-3 (e.g. paragraph 2.8.345) and noted that the Ørsted IPs consider that if offshore wind farms were not intended to be included in this context then the drafting of NPS EN-3 would expressly exclude them.

Post Hearing Note: The Ørsted IPs also note that this point was considered in the Awel y Mor decision, where the Examining Authority found at paragraph 5.14.78 of its Recommendation Report that “... had the content of NPS EN-3 specifically intended to exclude existing wind farm development from the application of NPS EN-3, then this would have been made explicitly clear”.

*Further, the Ørsted IPs refer to the suite of documents published by the Department for Energy Security and Net Zero (“**DESNZ**”) on 24 April 2025, which constitute “Planning for new energy infrastructure: 2025 revisions to National Policy Statements”. In that suite, DESNZ’s consultation summary document states that “emerging draft energy NPSs (or those amended but not having effect) are potentially capable of being important and relevant considerations in the decision-making process”. Therefore, the fact that Draft NPS EN-3 states, at paragraph 2.8.176, that “there are therefore clear merits for applicants to make an assessment of inter-array wake effects between their proposed developments, and nearby offshore wind generating stations that are planned, consented or operational” is pertinent to the Ørsted IPs argument in this examination that the Applicants must be required to undertake a wake loss assessment, along with DESNZ’s clarification on this in the consultation summary document which states that “we propose in EN-3 that an assessment of inter-array wake effects is recommended to take place between applicants and those of consented and operational wind farms”.*

The ExA asked the Ørsted IPs whether they intend to provide their own wake loss assessment. **Alex Tresadern, for the Ørsted IPs**, reserved the Ørsted IPs’ position on this matter but stated that, as noted above and in the Ørsted IPs’ Responses to ExQ1 [REP3-064], the position of the Ørsted IPs is that the Applicants should be required to undertake such an assessment and, in any event, it is likely that the Applicants’ assessment (or, at least, the Applicants’ assumptions used for that assessment) would be more accurate than that of the Ørsted IPs because the assessment would revolve around the Applicants’ project and could use the various measurements (e.g. regarding wind at the DBS Project) and detailed knowledge of the design of the DBS Project that the Applicants have available. **Mr Tresadern** also noted that the Applicants will have used wake modelling extensively when considering the optimum design for the DBS Project, including the impact from all nearby neighbours. It is a relatively easy step to reverse this calculation and model the impact of the DBS Project on the nearby existing wind farms. Indeed, the Applicants have recently published analysis demonstrating their ability to model neighbouring wakes accurately over distances that are similar to the those between the DBS Project and the Ørsted IPs assets. This leads to a natural conclusion that the impacts from

wake loss that will be experienced by nearby assets can indeed be accurately forecast and the Applicants are not adhering to the requirements of NPS EN-3 by refusing to do so.

The ExA noted that the information provided by the Ørsted IPs on the generating capacity of the Ørsted IPs' assets in Table 4 of the Ørsted IPs' Responses to ExQ1 **[REP3-064]** presents the maximum installed generating capacity of the assets and asked the Ørsted IPs to provide the actual wind generating capacity for each of those assets. **Alex Tresadern, for the Ørsted IPs**, confirmed that this information would be provided in writing.

*Post Hearing Note: The Ørsted IPs note that this comprises Action Point 13 of the ISH3 Action Points **[EV8-010]**. Having consulted with technical experts, the Ørsted IPs consider that the terms referred to by the ExA are analogous and therefore the figures being requested by the ExA are the same as those that have already been provided by the Ørsted IPs. It is standard to refer to wind assets by their installed capacity, as the Ørsted IPs have done – this capacity will only be reached when the wind conditions and the availability of the turbines allow. To account for the times when turbines are not available to generate, or when the wind conditions are such that all turbines will not be producing at full power, a capacity factor is estimated based on a wind resource or energy yield analysis. This analysis would provide the expected production from the assets in a standard wind year, but would not change the generating capacity of the turbines.*

The ExA noted that the Ørsted IPs' Responses to ExQ1 **[REP3-064]** stated that minimum lifespan expectancies for the Ørsted IPs' assets could be provided, and requested this information. **Alex Tresadern, for the Ørsted IPs**, confirmed that this information would be provided in writing.

*Post Hearing Note: The Ørsted IPs note that this comprises Action Point 14 of the ISH3 Action Points **[EV8-010]**. The earliest expected decommissioning year for each asset is as follows: Hornsea 1 (2044), Hornsea 2 (2047), Hornsea 3 (2062), Hornsea 4 (2065), Race Bank (2042), Lincs (2037) and Westermoor Rough (2039).*

The ExA asked the Ørsted IPs to confirm which of the DBS Project's array areas are of most concern to the Ørsted IPs regarding wake loss and why these are of concern. **Alex Tresadern, for the Ørsted IPs**, confirmed that this information would be provided in writing.

*Post Hearing Note: The Ørsted IPs note that this comprises Action Point 16 of the ISH3 Action Points **[EV8-010]**. The Ørsted IPs consider that both array areas are of significance to their assets, for the reasons set out in previous submissions regarding wake loss impacts.*

The ExA asked the Ørsted IPs to provide a view on wind sector management as a form of mitigation for wake loss effects and how this could be captured by the draft DCO. **Alex Tresadern, for the Ørsted IPs**, confirmed that this information would be provided in writing.

*Post Hearing Note: The Ørsted IPs note that this comprises Action Point 20 of the ISH3 Action Points **[EV8-010]**. Wind sector management refers to the process of adapting a different operating mode on the Applicants' turbines when the wind direction is such that it will cause wake on existing assets. Under normal conditions, turbines aim to operate as efficiently as possible to extract energy from the wind. The more energy that is extracted from the wind, the more the wind speed decreases as it passes*

	<p><i>through the rotor and, therefore, the higher the wake impacts will be. Turbines can change their operating setting to be less aggressive, hence extracting less energy from the incoming wind with a subsequent reduction of the wake impacts. The changes to operating modes would not be required for wind directions which do not result in wake impacts on neighbouring assets, and would also not be required for low and high wind speeds when the wake impacts are less.</i></p> <p><i>Wind sector management is a technically mature solution that is most commonly used to protect turbines from excessive loads due to upstream obstacles (e.g. mountains) or for turbines to operate in a reduced noise mode. The balance between turbine efficiency and wake impacts is not linear (i.e. a 1% reduction in turbine efficiency for the Applicants would not equal a 1% improvement of the wake impact) and would require a site-specific analysis to determine the cost and benefit of this approach to mitigation. For the Applicants, wind sector management may not prove to be an effective form of mitigation, as there are multiple wind directions which may cause wake impacts on neighbouring assets; however, this should be demonstrated through site-specific analysis.</i></p> <p>Alex Tresadern, for the Ørsted IPs, noted that, in any event and as set out in the Ørsted IPs' Responses to ExQ1 [REP3-064], the Ørsted IPs cannot make a properly informed judgment on the resolutions sought (including mitigation) without seeing an independent assessment of the wake loss impact on their assets, which the Applicants should provide. It may be that the Ørsted IPs seek a separate commercial agreement (which are commonplace within the industry) with the Applicants on these matters, or it may be that protective provisions on the face of the DCO are sought in lieu of such agreement.</p> <p>The ExA asked the Ørsted IPs to provide details of how the agreements referred to above are commonplace in the industry. Alex Tresadern, for the Ørsted IPs, confirmed that this information would be provided in writing.</p> <p><i>Post Hearing Note: Whilst the Ørsted IPs cannot provide details of confidential agreements, the Ørsted IPs refer to two submissions made by the Ørsted IPs during the recent examination of the Morgan Offshore Wind Project: (1) the Ørsted IPs' Response to Deadline 3 Submissions [REP4-048 of that examination]; and (2) the Ørsted IPs' Responses to ExQ2 [REP5-059a of that examination]. In these submissions, the Ørsted IPs noted 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 (which are Ørsted developments). The Ørsted IPs therefore reiterate this position in response to this question from the ExA. In addition, the Ørsted IPs note that, for example, overlaps and impacts in relation to oil and gas infrastructure are dealt with in such a manner, particularly in relation to additional costs deemed to be incurred by owners of existing assets (notably in respect of helicopter access).</i></p> <p>The ExA asked the Ørsted IPs what, if sought, the protective provisions for their benefit would capture. Alex Tresadern, for the Ørsted IPs, confirmed that this information would be provided in writing.</p> <p><i>Post Hearing Note: The Ørsted IPs note that this comprises Action Point 24 of the ISH3 Action Points [EV8-010]. However, given that any potential resolutions to the issue of wake loss are so interlinked with any wake loss assessment, and the Ørsted IPs have until Deadline 5 of the examination to decide whether to submit their own assessment (per Action Point 12 of the ISH3 Action Points [EV8-010]), the Ørsted IPs wish to reserve their position on this matter until Deadline 5 as well.</i></p>
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	<p>The ExA asked the Ørsted IPs if there is any additional information which could be provided by the Applicants, noting the high level nature of the details of the proposed array areas of the DBS Project, which would assist in any potential wake loss assessment undertaken by the Ørsted IPs. Alex Tresadern, for the Ørsted IPs, confirmed that the Ørsted IPs would consider this request and liaise with the Applicants if they do indeed have information to request.</p> <p><i>Post Hearing Note: The Ørsted IPs note that this comprises Action Point 21 of the ISH3 Action Points [EV8-010]. The Ørsted IPs recognise that, at this point in time, the Applicants hold information (e.g. layout, capacity etc) regarding the DBS Project that is commercially sensitive for various reasons. Therefore, the Ørsted IPs do not consider that it would be appropriate to ask the Applicants for such information and, indeed, reinforces the position of the Ørsted IPs that it should be the Applicants who undertake the wake loss assessment.</i></p>
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