

Outer Dowsing Offshore Wind

Equinor IPs Deadline 6 Submission

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Outer Dowsing Offshore Wind Examination submission Equinor IPs Deadline 6 Submission		
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Glossary of Acronyms

DCO	Development Consent Order
DEL	Dudgeon Extension Limited
DEP	Dudgeon Offshore Wind Farm Extension Project
SEL	Scira Extension Limited
SEP	Sheringham Shoal Offshore Wind Farm Extension Project
SoS	Secretary of State for Energy Security and Net Zero
WTG	Wind Turbine Generators

Glossary of Terms

The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation (and its affiliates), Total Energies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation, TotalEnergies and GULF.
DEP Array area	The area offshore within which the DEP wind turbine generators (WTG), offshore substation, and infield, interlink and export cables will be positioned.
Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.
Equinor	Equinor New Energy Limited acting on behalf of Scira Extension Limited (SEL) and Dudgeon Extension Limited (DEL)
Ørsted IPs	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 Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.
Project Array area	The area offshore within which the Project’s generating station (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling will be positioned.
SEP and DEP Order	Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024.
SEP Array area	The area offshore within which the SEP wind turbine generators (WTG), offshore substation, and infield, interlink and export cables will be positioned.
Sheringham Shoal Offshore Wind Farm Extension Project (SEP)	The Sheringham Shoal Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.

1 Introduction

1. GT R4 Limited (trading as Outer Dowsing Offshore Wind) ("The Applicant") has made an application for development consent for the construction and operation of the Outer Dowsing Offshore Wind project ("the Project").
2. Equinor New Energy Limited ("Equinor") is developing the Sheringham Shoal Extension Project ("SEP") and the Dudgeon Extension Project ("DEP") on behalf of Scira Extension Limited ("SEL") and Dudgeon Extension Limited ("DEL") and has submitted a relevant representation on behalf of SEL and DEL.
3. Dudgeon Offshore Wind Limited ("DOWL") is the owner of the Dudgeon Offshore Wind Farm (Dudgeon) which is located approximately 32 km from the North Norfolk Coast in the Southern North Sea and has been operating since 2017. Scira Offshore Energy Limited ("SOEL") is the owner of the Sheringham Shoal Offshore Wind Farm ("SS"), which is located approximately 20 km from the North Norfolk Coast in the Southern North Sea and has been operating since 2012. Dudgeon and SS are operated by Equinor on behalf of DOWL and SOEL.
4. The Equinor IPs are making this Deadline 6 submission in order to provide responses to the **Issue Specific Hearing – Action Points** [EC13-008] and to submissions made by the Applicant and other IPs including the Ørsted IPs at Deadline 5, between Deadlines 5 and 6 and at Deadline 6 (in such cases where documents have been shared with the Equinor IPs prior to submission).
5. The further submissions being made by the Equinor IPs at Deadline 6 are summarised in Section 2.

2 Documents submitted at Deadline 6

6. The following submissions have been made by the Equinor IPs at Deadline 6:
 - i. **Equinor IPs Deadline 6 submission** (this document)
 - ii. **Equinor IPs Wake Effects Position Statement**, including
 1. Appendix 1 – Wake Loss Financial Impact Assessment on behalf of the Equinor IPs (Revision 2)
 2. Appendix 2 – Protective Provisions (Revision 2)
 3. Appendix 3 – Extract of paragraph 72 of The Associated British Ports (Immingham Green Energy Terminal) Order 2025
 - iii. **Written Summary of Equinor IPs' Oral Submissions at Issue Specific Hearing (ISH) 8**
7. This document provides:
 - i. Equinor IPs responses to Issue Specific Hearing 8 Actions (Section 3)
 - ii. Equinor IPs comments on Deadline 5 and 6 submissions (Section 4.1)
 - iii. Equinor IPs comment on ODOW responses to Equinor's Deadline 4a submission (Section 4.2)

3 Issue Specific Hearing 8 Actions

8. The Equinor IPs attended Issue Specific Hearing (ISH) 8 on 19 March 2025 and made oral submissions in relation to agenda item 3.2 *Oil, Gas and Other Offshore Infrastructure: Wake loss; and Co-operation and agreements*. A **Written Summary of Equinor IPs' Oral Submissions at Issue Specific Hearing (ISH) 8** has been submitted at Deadline 6.

9. Three of the Action Points from ISH8 were addressed to the Equinor IPs for follow up. The Equinor IPs met with the Applicant in relation to discuss these points on 31 March 2025. The following joint statement has been agreed between the Equinor IPs and the Applicant with respect to the discussion of the three relevant action points at that meeting.

Action Point 3 from ISH8 (EV13-008), required the Applicant and Equinor IPs to have further engagement regarding policy tests and protective provisions and to provide an agreed final statement by Deadline 6. The Applicant and the Equinor IPs met on 31 March 2025, in which meeting it was agreed that the parties hold fundamentally differing positions regarding the policy tests and the need for protective provisions, with both parties intending to set out their positions in writing at Deadline 6 for the Examining Authority's consideration. The discussions between the Applicant and the Equinor IPs at the meeting on 31 March 2025 also addressed Action Point 1 and Action Point 2 from ISH8 (EV13-008). With respect to Action Point 1 it was agreed that Revision 2 of the Wake Impact Assessment Report (document reference 23.6 submitted at Deadline 6) would be shared with the Equinor IPs prior to Deadline 6 and that this revision would be undertaken on the basis of an updated Dudgeon Extension Project (DEP) indicative wind turbine generator (WTG) layout such that no WTGs are placed within the obstacle free zone for navigational safety in the northwestern part of the DEP North array area, which is secured in Requirement 35 of The Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024. It was agreed that such a layout would represent a more realistic worst-case scenario and that on this basis Revision B of the Wake Impact Assessment Report [REP5-152] represents a suitable basis for the assessment of the Project's impacts due to wake effects.

10. Further comments in relation to the Equinor IPs follow up on the action points are made in **Table 1**.

Table 1 Equinor IPs' response to the actions arising from ISH8 held on Wednesday 19 March 2025

Number	Action	Party	Equinor's Response
1	Orsted IPs and Equinor IPs to hold discussions with the applicant relating to the applicants Wake Impact Assessment Report [REP5-152] and Carbon Payback Sensitivity Analysis [REP5-100] and provide detailed responses to these documents, including whether they consider the findings of the Wake Impact Assessment Report to be significant in EIA terms.	Orsted IPs Equinor IPs Applicant	<p>The discussions between the Equinor IPs and the Applicant at the meeting held on 31 March 2025 addressed the points raised in Action Point 1.</p> <p>Revision 2 of the Wake Impact Assessment Report (document reference 23.6 submitted at Deadline 6) has been shared with the Equinor IPs prior to Deadline 6 and has been reviewed by the Equinor IPs. Revision 2 was undertaken on the basis of an updated Dudgeon Extension Project (DEP) indicative wind turbine generator (WTG) layout such that no WTGs are placed within the obstacle free zone for navigational safety in the northwestern part of the DEP North array area, which is secured in Requirement 35 of The Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024. It is agreed by the Equinor IPs and the Applicant that such a layout represents a more realistic worst-case scenario and that on this basis Revision 2 of the Wake Impact Assessment Report represents a suitable basis for the assessment of the Project's impacts due to wake effects.</p> <p>Further detailed response to Revision 2 of the Wake Impact Assessment Report and consideration of whether its findings are significant in EIA terms are presented in Section 3 and Section 4 of the Equinor IPs Wake Effects Position Statement submitted at Deadline 6.</p> <p>The Equinor IPs note the comments made by the Ørsted IPs on the Carbon Payback Sensitivity Analysis [REP5-100] in their Deadline 6 submission, which the Equinor IPs have reviewed prior to its submission.</p>

Number	Action	Party	Equinor's Response
			The Equinor IPs do not have further comment on the Carbon Payback Sensitivity Analysis [REP5-100].
2	Following liaison with the applicant on this matter, Orsted IPs and Equinor IPs to provide a written submission to set out: why the economic impacts may bring forward the decommissioning of their OWFs; also, whether an economic loss based upon the applicant's initial findings would still represent a risk to the longer-term viability of their respective assets.	Orsted IPs Equinor IPs Applicant	Reference is made to Section 3 and Section 5 of the Equinor IPs Wake Effects Position Statement submitted at Deadline 6.
3	Orsted, Equinor and the applicant to have further engagement and to provide analysis of their respective positions in relation to NPS policy tests and protective provisions and to provide an agreed final statement by deadline 6	Orsted IPs Equinor IPs Applicant	Reference is made to the Section 3 and Appendix 2 of the Equinor IPs Wake Effects Position Statement submitted at Deadline 6.

4 Responses to Deadline 5 and Deadline 6 submissions

4.1 Equinor IPs' comments on Deadline 5 and 6 Submissions

Table 22 Equinor IPs' comments on Deadline 5 and 6 submissions and additional submissions made between Deadline 5 and Deadline 6

Number	Document	Equinor's Response
1	The Ørsted IPs Additional Submission – Submission between Deadline 5 and 6 and Submission at Deadline 6	<p>The Equinor IPs have reviewed the Ørsted IPs Additional Submission - Submission between Deadline 5 and 6 published on the 28 March 2025 and a draft of the Ørsted IPs Submission at Deadline 6.</p> <p>The Equinor IPs wish to note that they have been engaged in positive discussions with the Ørsted IPs regarding protective provisions, policy interpretation and Deadline 6 submissions. As is evidenced by the closing submissions of both the Equinor IPs and the Ørsted IPs, the parties are in alignment with their position.</p>
2	The Applicant's Comments on Deadline 4a Submissions [REP 5-150]	The substantive points made by the Applicant in response to Equinor's comments on 21.9 Wake Loss Technical Note [REP4a-128] in The Applicant's Comments on Deadline 4a Submissions [REP5-150] are addressed in Table 3 below.

4.2 Equinor IPs' comments on ODOW responses to Equinor's Deadline 4a Submission

Table 3 Equinor IPs' comments on ODOW responses to Equinor's Deadline 4a Submission

Ref No	Equinor Submission	Applicant's Response at Deadline 5	Equinor's Response at Deadline 6
1. Introduction			
3	The distance between the DEP Array area and the Project Array area is 13.3 km. The distance between the SEP Array area and the Project Array area is 25.8 km. The separation between the Project Array area, the SEP Array area and the DEP Array area is illustrated in Figure 1.	The Applicant notes that the distance between the DEP Array area and the Project WTG Area (i.e. accounting for the ORBA) is 13.5km and the distance between the SEP Array area and the Project WTG Area (i.e. accounting for the ORBA) is 26.1km (REP4-114).	The Equinor IPs note that the difference between the minimum separation distances presented by the Applicant and those presented by the Equinor IPs results from a difference in how they are measured. The Equinor IPs have measured from the edge of the order limits of The Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024, while it is understood that the Applicant has measured from the edge of the SEP and DEP agreement for lease area, which does not include the temporary working areas included within the order limits.
7	Equinor continues to progress discussions with the Applicant with respect to a cooperation and proximity agreement in relation to the proximity of the Outer Dowsing Offshore Wind project to the Sheringham Shoal Extension Project (SEP) and the Dudgeon Extension Project (DEP).	This comment is noted by the Applicant.	Further to their previous discussions with the Applicant, the Equinor IPs shared a draft Cooperation Agreement and template Proximity Agreement with the Applicant on 03 April 2025. The Equinor IPs will continue to progress discussions with the Applicant in relation to these agreements following the close of the examination. The Equinor IPs have included protective provisions with respect to cooperation and proximity in Appendix 2 of the Equinor IPs

			<p>Wake Effects Position Statement submitted at Deadline 6. The Applicant has shared its preferred form of protective provisions with the Equinor IPs including a plan. This form of protective provisions has not been agreed with the Applicant as it does not secure a cooperation and proximity agreement needed to manage works within and in proximity to the area of overlap. The form of protective provisions included in the draft DCO by the Applicant further does not provide the protections required by the Equinor IPs in relation to wake effects.</p> <p>It is noted that there is an area of overlap between the order limits of the Sheringham Shoal and Dudgeon Offshore Wind Farm Extensions Order 2024 in the northwest corner of the DEP North array area and the order limits of the Project in the area of the offshore export cable corridor.</p>
2. Wake Effects			
10	Equinor wishes to highlight its interest in the SEP and DEP projects in relation to the issue of wake effects, and to raise concerns with respect to the potential impacts on the energy yields of the SEP and DEP projects as assessed in the Wake Loss Technical Note [REP4-114] Table 4-1	This comment is noted by the Applicant. The Applicant maintains its conclusion that impacts on SEP and DEP would not lead to a significant environmental effect and that any adverse would be very limited and not such as materially to affect the overall planning balance, as set out in the Wake Loss Technical Note (REP4-114).	Reference is made to Section 3 and Section 4 of the Equinor IPs Wake Effects Position Statement submitted at Deadline 6.

Ref No	Equinor Submission	Applicant's Response at Deadline 5	Equinor's Response at Deadline 6
2.1 Comments on the Wake Loss Technical Note			
2.1.1 Wake Loss Assessment			
13	In continuing discussions with the Applicant, Equinor will seek to fully understand the details of the assessment methodologies, the assumptions made and whether the assessment represents the worst case scenario for impacts on SEP and DEP.	This comment is noted by the Applicant. The Applicant provided further explanation as to the methodology used at Deadline 4a in the Applicant's Wake Loss Methodology Clarification Note (RRP4a 119).	The Equinor IPs have noted in the Equinor IPs Wake Effects Position Statement submitted at Deadline 6 that they have reviewed Revision 2 of the Wood Thilsted Wake Impact Assessment Report submitted at Deadline 6 and consider it to be a suitable basis for definition of a worst-case scenario for the assessment of impacts due to wake effects. The Equinor IPs Wake Effects Position Statement further notes the need for the modelling to be re-run post-consent following confirmation of WTG design parameters in agreement with the Equinor IPs. The protective provision submitted in Appendix 2 of the Equinor IPs Wake Effects Position Statement provide a mechanism for this process.
2.2 Comments on Ørsted IPs' Responses to ExQ1			
15	Equinor agrees with Ørsted IPs' statement that there is sufficient evidence of material farm-to-farm wake effects at the separation distances relevant to the projects being considered in the Wake Loss Technical Note [REP4-114], including those with separation distances greater than those considered in the Frazer-Nash Consultancy	The Applicant notes that this is a comment on the Ørsted IP's answer to Q1 OG 1.2. The Applicant refers the Interested Party to the following: (1) the Applicant's response to the Ørsted IP's answer to Q1 OG 1.2 (REP3-054, page 79); and (2) the Applicant's Wake Loss Technical Note (REP4-114).	Reference is made to Section 3 and Section 4 of the Equinor IPs Wake Effects Position Statement submitted at Deadline 6.

	Array Layout Yield Study, as referenced in The Crown Estate's Responses to ExQ1, [REP2-080] and including both SEP and DEP.	<p>REP4-114 sets out the analysis of the wake effects of neighbouring windfarms including those with a separation distance greater than those considered in the Array Layout Yield Study (REP2-080) including both SEP and DEP notwithstanding the Applicant's submission on page 8 of REP4-114 that:</p> <p>There is no requirement for an assessment to be carried out for an effect which is not likely to be significant. An effect which is categorised in relevant literature as likely to be "vanishingly small" or even simply "small" cannot reasonably be said to be significant. The Applicant has conducted the assessment set out in this note to provide further comfort that potential wake loss effects even when considered on a precautionary basis cannot, in the context of this Project, be considered significant in EIA terms.</p>	
16		The Applicant directs Equinor to section 3 of the Applicant's Wake Loss Technical Note (REP4-114) which explains why the technical papers submitted are not relevant to the examination given that, beyond making conclusions that wake loss can, under certain conditions, be experienced, the information included within these papers are not applicable or even helpful in undertaking an assessment of the site specific issues related to the Project.	The Equinor IPs consider the academic papers submitted by the Ørsted IPs on the topic of wake loss to be relevant to the examination.

Ref No	Equinor Submission	Applicant's Response at Deadline 5	Equinor's Response at Deadline 6
3. Conclusion			
17	Equinor considers that the assessment presented in the Wake Loss Technical Note [REP4-114] demonstrates significant impacts on the energy yield of SEP and DEP.	<p>The Applicant refers to its above-quoted submissions on page 8 of the Wake Loss Technical Note which provides the context for the submission of the Note and makes clear that, per relevant literature, an effect likely to be “small” or “vanishingly small” cannot reasonably be said to be significant and the provision of the assessment has been done on a precautionary basis to provide further comfort.</p> <p>Within this context, the Wake Loss Technical Note (REP4-114) sets out that the impacts the Interested Party refers to are not significant and provides the result of external wake impact assessment on SEP and DEP which show an additional 0.2% and 0.8% of external wake loss caused by the Project on SEP and DEP respectively (Table 4-1). Impacts of this level of magnitude cannot be described as significant.</p> <p>The note sets out assessments of annual electricity production and carbon payback, showing that the level of impact on neighbouring windfarms, including SEP and DEP, is not significant in Environmental Impact Assessment terms.</p> <p>First, annual electricity production net assessments are set out in Tables 5-1 and 5-2 show the impact on gross production from offshore windfarms including both SEP and DEP in two highly conservative hypothetical scenarios. When compared to the</p>	Reference is made to Section 3 and Section 4 of the Equinor IPs Wake Effects Position Statement submitted at Deadline 6.

		<p>predicted annual electricity generation of the Project, the predicted annual electricity generation of the Project is 20.4 times larger than 0.5% of the total annual electricity generation of the neighbouring OWFs considered, and 10.2 times larger than 1% of it. The building of the Project would still result in a significant net increase in renewable energy generation under these hypothetical scenarios.</p> <p>Second, Carbon Payback assessments are set out in tables 5-3 to 5-7. On page 19 of REP4-114, the results of these assessments are considered and it is concluded that the increases in carbon payback time are not material for the purposes of EIA.</p> <p>On the basis of all the above, the Applicant does not consider the wake effects related to the Interested Party to be significant in EIA terms. The Applicant notes that Equinor has not submitted any evidence into the Examination to support its assertion that the effect of the Project on the energy yield of SEP and DEP would be significant.</p>	
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References

Carbon Payback Sensitivity Analysis: Wake Effects, Outer Dowsing Offshore Wind, 2025, REP5-100
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