

Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Appendix 2 to Deadline 2: Applicant's response to
ISH2 Action Point 8 – Amendments to the Red Line
Boundary proposed by Interested Parties

Relevant Examination Deadline: 2

Submitted by Vattenfall Wind Power Ltd

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Revision A

Drafted By:	Vattenfall Wind Power Ltd / Marico Marine
Approved By:	Daniel Bates
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Appendices/Annexes referred to

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Appendix 3	Applicant's Response to Written Representations on the theme of Ports/Shipping Routes
Appendix 4	Applicant's Response to Written Representation - Pilotage
Appendix 5	Applicant's Response to Written Representation – Navigation Risk Assessment Methodology and Consultation
Annex A to Appendix 3	Point by Point Responses to Shipping and Navigation Consultee Written Representations

1 Responses to ISH2 Action 7 from Interested Parties

- 1 Following Issues Specific Hearing (ISH) 2 the Examining Authority requested that: *where proposals to reduce the extent of proposed array area within the Thanet OWFE RLB were made at ISH2, parties making such requests are asked to provide:*
 - A plan based on the Sea Zones Plan [OD-008] identifying the extent of the proposed reduction;
 - A written justification, explaining and evidencing the need for the extent of the proposed reduction.
- 2 Submissions relating to this action point were made by Maritime and Coastguard Agency (MCA), Trinity House, Port of London Authority (PLA), Estuary Services Limited (ESL), London Pilots Council (LPC), Port of Tilbury (PoT) and London Gateway.
- 3 All respondents proposed the same reduction in red line boundary, specifically a complete loss of the south-western and north-western extents of the project, as show in Figure 1.
- 4 This appendix to the Applicant's Deadline 2 submission is in response to ISH2 Action 8: **RLB Reduction Requests: Responses and Commercial Viability Analysis - Where proposals are submitted in response to ISH2 Action 7, please provide an in-principle response.**
 - Is the proposal accepted or (for reasons) rejected in whole or part;
 - If the effect of a RLB reduction request would be to leave insufficient array area for a commercially viable project, this should be identified.
- 5 In response to Action 8 the Applicant has considered the commercial viability of the project (Section 2), the justification for the design flexibility required by the project within the red line boundary (Section 3) and the extent to which the submissions by the Interested Parties have sought to justify the proposed reduction (Section 4).

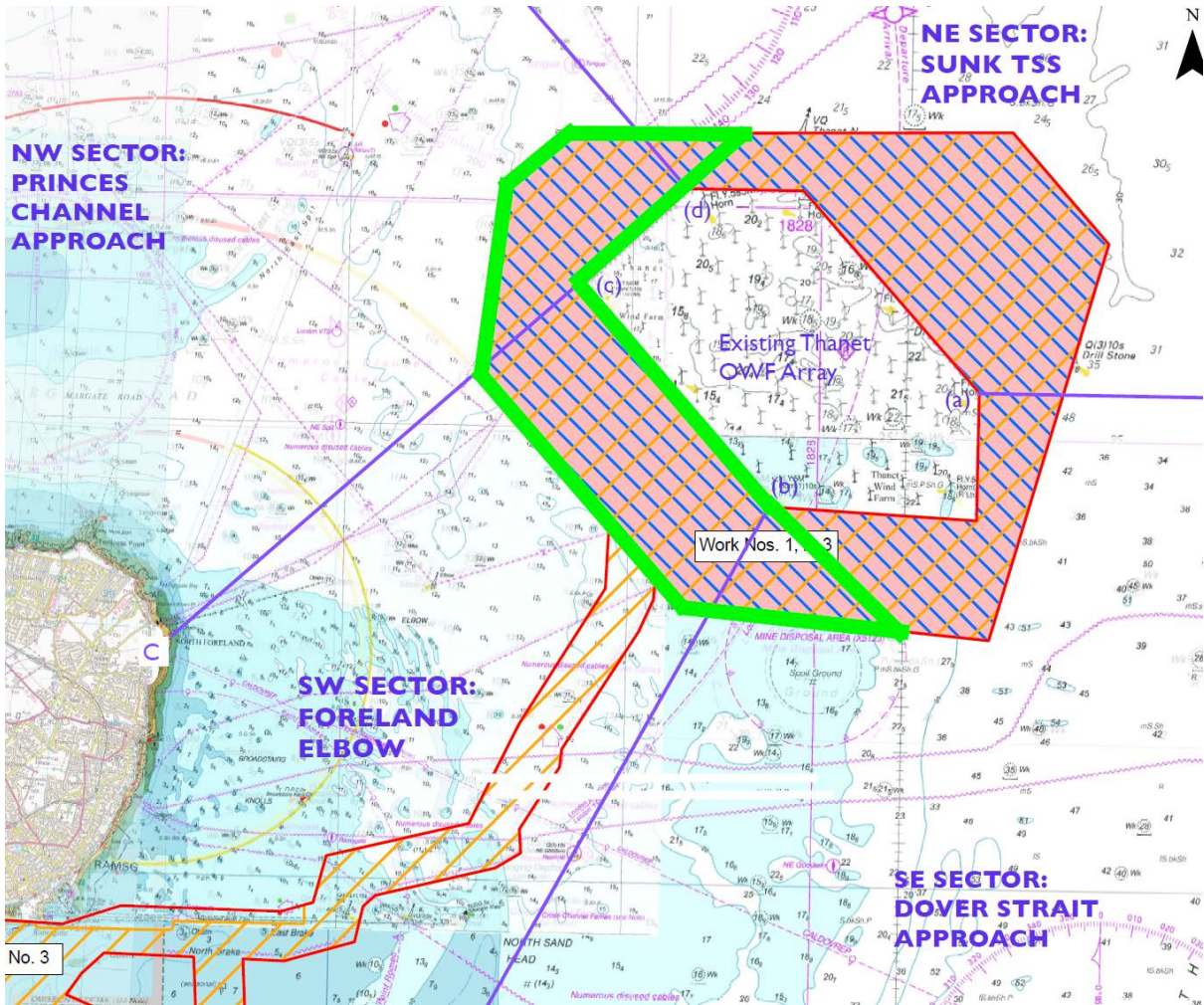


Figure 1: Extract from PLA and ESL Response to further information requested at ISH2 (REP1-137)

2 Commercial viability

- 6 In order to have a viable project, it is essential to achieve an economical design alongside respecting a wide range of constraints including the use of the sea and the environmental/physical conditions present on this site.
- 7 With Contract for Difference (CfD) levels now approaching government market reference prices, it is clear that the industry has achieved drastic reduction in levelized cost of energy (LCOE), exceeding government expectations. However, in order for future projects to continue to this downward trend in LCOE for the benefit of consumers, projects must be afforded the flexibility to optimise their project designs, within reason and considering all constraints.
- 8 In order to be competitive in an industry where scale is increasingly important in delivering low cost to consumer projects, a reduction to the proposed Order Limits of approximately 50%, as identified in Written Representations from various Interested Parties (IPs) would result in a loss of generating capacity, higher LCOE and would categorically result in a commercially unviable project.

3 Design flexibility

- 9 The proposed Order Limits that were submitted with the Applicant enables some flexibility to ensure the future layout design can achieve a sustainable project. Design of offshore wind farms requires careful considerations of numerous constraints including but not limited to:
- Soil conditions
 - Existing assets and cables
 - Geophysical constraints e.g. reef, bathymetry, boulder fields...
 - Wrecks
 - Shipping lanes
 - Existing wind farms
 - UXO, firing ranges
 - Wind production
 - Constructability
- 10 In common with all such projects, Thanet Extension project does not yet have detailed pre-construction survey data. The EIA has demonstrated through primary survey data and preliminary site analysis and that, in common with most OWFs, the site is not without its challenges and will require infrastructure to be sensitively sited. Examples being the infrastructure, archaeology, and benthic ES chapters all of which require micro-siting of turbines or cables or identify constraints such as UXO disposal areas. This increases risk to the project and reduces the ability to optimise design should a hard constraint that could potentially affect future viability of the project be found during pre-construction survey.
- 11 The need for flexibility is recognised by NPS-EN3 paragraph 2.6.42-43 and is a critical part of any application for an offshore wind farm. The Applicant considers that an appropriate balance has been struck between the need for certainty and the need for flexibility, however the proposed reduction to the as submitted Order Limits would reduce this flexibility to an unacceptable degree

4 Evidence for the proposed change

- 12 Whilst there is evident agreement of the extent of the proposed change to the order limits across the interested party responses to Action 7 from ISH2 at Deadline 1, the Applicant has not been able to identify a clear and consistent rationale or evidence base behind such a substantive amendment.
- 13 In response to Deadline 2 the Applicant has set out consideration of sea room for vessels transiting along the south west boundary (Appendix 3) and for pilotage (Appendix 4). In both cases the Applicant considers that sufficient sea room would remain available following the construction of Thanet Extension.
- 14 From the Applicant's review of responses to Action 7, in some cases constraints have been put forward by interested parties, which are responded to in detail in Appendix 2 of the Deadline 2 submission. However, the Applicant does not consider that this justifies the extent of the proposed changes.

Table 1: Applicant's response to proposed RLB change

Interested party	Summary of justification for proposed change	Applicant's response
Port of Tilbury and London Gateway	Response identifies reduction of sea room at Elbow buoy and NE Spit buoy, however does not explain why the boundary should be reduced to the extent proposed.	<p>The Applicant has provided an evidence basis to the assessment of risk through conducting an MGN 543 compliant NRA including collection of empirical data and supported by collision risk modelling and pilotage bridge simulation, showing the increase in risk can be managed by introduction of risk controls.</p> <p>Further analysis undertaken using the Sea Room calculations provided by London Pilot Council in their Deadline 1 Submission, which was applied to vessels transiting the inshore route (see Applicants Deadline 2 Appendix 3), suggests there is sufficient sea room at the Elbow Buoy and NE Spit Buoy based on the current largest vessels that transit these routes post construction of the project.</p> <p>Furthermore, PoT/LG does not appear to provide any evidence or analysis to underpin this solution, using MCA guidance and/or Annex 3 of MGN543 to identify what the required sea room is.</p>

Interested party	Summary of justification for proposed change	Applicant's response
<p>PLA / ESL</p>	<p>Response identifies change in RLB due to reduction of sea room to North West, West, and South NW area.</p>	<p>Analysis undertaken against London Pilot Council Deadline 1 submissions (see Applicants Deadline 2 Appendix 4) corroborates the findings of the NRA. The Applicant has provided an evidence basis to the assessment of risk through conducting an MGN 543 compliant NRA including collection of empirical data and supported by collision risk modelling and pilotage bridge simulation, showing the increase in risk can be managed by introduction of risk controls.</p> <p>Further analysis undertaken using the Sea Room calculations provided by London Pilot Council in their Deadline 1 Submission, which was applied to vessels transiting the inshore route (see Applicant's Deadline 2 Appendix 3) suggests there is sufficient sea room at the Elbow Buoy (South W) and NE Spit Buoy (West) based on the current largest vessels that transit these routes post construction of the project.</p> <p>Analysis was also undertaken in Applicants Deadline 2 Appendix 4 on the LPC evidential basis for pilot transfer sea room, which also support the Applicants' Assessments that the NE Spit pilot Boarding Station remains operational post construction of the project.</p> <p>Sea room to the North of the wind farm, is not considered an issue to vessels as the only constriction to the north of the wind farm is the Tongue anchorage that is rarely used.</p> <p>Whilst the PLA identifies where they consider there to be constraints based on current operations, PLA does not appear to provide specific evidence or analysis to</p>

Interested party	Summary of justification for proposed change	Applicant's response
		<p>underpin the scale of the proposed change to the RLB, using MCA guidance and/or Annex 3 of MGN543 to identify what the required sea room is.</p>
LPC	<p>Provide evidence and analysis of searoom, using MCA guidance and/or Annex 3 of MGN543 to identify what the required turning circle and passing space is, and identifies other areas of narrowing searoom within the region</p>	<p>Appendix 3 of this Deadline 2 submission (shipping routes) and Appendix 4 of this Deadline 2 submission (pilotage) provide a more detailed response to this evidence, drawing on the empirical data available to produce evidential rather than the theoretical vessel sizes provided in LPC response.</p>
MCA	<p>References a reduction in sea room and that the risk is not suitably mitigated.</p>	<p>The response does not provide evidence or justification for the boundary change proposed. Furthermore MCA does not appear to provide any evidence or analysis to underpin this solution, using MCA guidance and/or Annex 3 of MGN543 to identify what the required sea room is.</p>
Trinity House	<p>Preferred solution is identical to other IPs, stating that it takes into account the worst case scenario of turbines being placed on the RLB, and possible 500m safety zones during construction and at various times during the operation phase.</p>	<p>The response does not provide evidence for the boundary change beyond the suggestion that WTGs can be on the boundary and 500m safety zones extending from it. Whilst the EIA considers WTGs within an array it is important to note, and Trinity House will be aware of this through regular liaison with all post-consent OWFs when agreeing layouts, that WTGs do not practically get placed on boundaries due to the need to avoid 'oversail' and ensure other impacts are within the proposed Order Limits.</p> <p>Furthermore Trinity House does not appear to provide any evidence or analysis to underpin this solution, using MCA guidance and/or Annex 3 of MGN543 to identify what the required sea room is.</p>

- 15 The change to the proposed Order Limits that would be required to mitigate effects of the project proposed by the interested parties seeks to remove the effects entirely. There is no substantive evidence to justify this approach and this position is not accepted by the Applicant. It appears that *any* decrease in sea room in the areas would lead to, in the view of the interested parties, unacceptable or intolerable risks to shipping. However there has been no transparent calibration of the proposed reductions by reference to any detailed evidence or assessment.
- 16 This position (of no decrease in sea room being the only acceptable proposal) is not evidenced by the number of incidents in the area since the construction of the existing wind farm or by the level of concern being raised regarding the current situation. Were it to be considered that the current available sea room is on the very boundary of what could be considered tolerable, it should be expected that this would be reflected in both accident statistics and in the proactive raising of these concerns to the relevant forums and statutory authorities, followed by implementation of targeted mitigation. The Applicant asked the MCA and Trinity House whether such concerns about this area were being raised to them in the meeting of 4/10/18 and both parties confirmed that they were not aware of any such concerns being raised. The Applicant has also asked for incident reports, risk assessment and pilot boarding data from PLA to support their view on risk and has not received any documents or data for review.

5 Summary

- 17 With regard to the specific questions raised by the ExA in Action 8 from ISH2, the in-principle response from the Applicant is as follows.
- 18 *Is the proposal accepted or (for reasons) rejected in whole or part;*
- The Applicant rejects the proposals submitted by the Interested Parties on the grounds that the extent of the reduction is not justified and evidence has not been provided to demonstrate the need for such a radical amendment to the red line boundary.
- 19 *If the effect of a RLB reduction request would be to leave insufficient array area for a commercially viable project, this should be identified.*
- As set out in Section 2, the Applicant confirms that the proposed reduction would result in a commercially unviable project.