

Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Appendix 19 to Deadline 4 Submission: The consequences of the SEZ on assessment of Red-throated Diver interest feature of OTE SPA alone and in-combination

Relevant Examination Deadline: Deadline 4

Submitted by Vattenfall Wind Power Ltd

Date: March 2019

Revision A

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Date of Approval:	March 2019
Revision:	A

Revision A	Original document submitted to the Examining Authority
N/A	
N/A	

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1 Introduction

1.1 The Purpose of this Submission

- 1 The purpose of this submission is to provide the Examining Authority (the ExA) with a revised assessment of impacts on red-throated diver, *Gavia stellata*, an interest feature of the Outer Thames Estuary (OTE) Special Protection Area (SPA) both alone and in-combination. The need for a revised assessment of impacts arises from the decision by the Applicant to introduce the Structural Exclusion Zone (SEZ).
- 2 The SEZ is being proposed to the ExA at D4 and is secured as a condition in the DCO (Schedule 11, Part 4, Condition 23). The Applicant is submitting information as regards the non-shipping implications of the SEZ as Appendix 23 of the D4 submission. Effectively, the purpose of the SEZ is to ensure that certain structures cannot be placed within the SEZ. Such structures are, specifically, wind turbine foundations, offshore substation foundations, met mast and waverider/lidar buoys. Other temporary activities during construction and decommissioning, such as vessel manoeuvring, anchor handling and Jack Up barge placement will be possible. Any other long-term (but moveable) structures as requested by the relevant authorities, such as marcation buoyage will be permitted.
- 3 This note provides evidence to the ExA that the result of the incorporation of an SEZ to the west of the proposed development's Array Area, even when assessed following the very precautionary approach advocated by Natural England, is the elimination of any displacement effect on red-throated diver. The Thanet Extension will therefore make no contribution to any in-combination assessment of potential displacement of red-throated diver in the Outer Thames Estuary SPA.

1.2 Summary of Key Findings

- 4 The following statements are provided to the ExA that summarise the Applicant's key findings and conclusions in support of Thanet Extension;
 - The implementation of the SEZ significantly reduces the array area and buffer in extent and results in the array being at an even greater distance from the OTE SPA boundary. The result is no potential for contribution to any effect on displacement of red-throated diver with respect to the OTE SPA due to Thanet Extension;

- The agreed (with Natural England) absence of an Adverse Effect on the Integrity (AEOI) on the red-throated diver feature of the OTE SPA from Thanet Extension alone; and
- The absence of an AEOI on OTE SPA from Thanet Extension in-combination, given the distance between Thanet Extension and the OTE SPA now that the SEZ forms part of the Application.

2 Existing Consented Offshore Wind Farms

2.1 Outer Thames Estuary and Red Throated Diver

- 5 The in-combination assessment for the Outer Thames Estuary (OTE) SPA and red throated diver (RTD) within the Report to Inform Appropriate Assessment (RIAA) (REP2-018 and REP2-019) includes a number of already consented projects, which are at varying stages in their development. The in-combination assessment also includes projects yet to achieve consent. All of these projects were considered in terms of displacement effects. A summary of the existing position on the projects consented most recently, as regards the OTE and RTD, is provided below in Table 1. Where no ruling has yet been made (e.g. the project is progressing through planning), the current position is instead provided. Where a date is available for the conclusion of the HRA/decision letter, projects are presented in date order of the HRA/decision letter.
- 6 No comments on the projects included within the in-combination assessment for the OTE SPA and RTD were raised by Natural England in the Statement of Common Ground (REP3-041).

Table 1: Potential displacement of RTD with respect to the OTE SPA (adapted from Table 12.8 of the RIAA)

Offshore wind farm	Tier	Location relative to the SPA	Secretary of State ruling on In-combination Impact (or current position if not yet ruled)
Kentish Flats	1 – consented and operational	Within the OTE SPA	No project specific assessment of the OTE SPA within the Environmental Statement.
Scroby Sands		Within the OTE SPA (part)	No known project specific assessment of the OTE SPA.

Offshore wind farm	Tier	Location relative to the SPA	Secretary of State ruling on In-combination Impact (or current position if not yet ruled)
Thanet		Outside of, but functionally linked to OTE SPA	The Thanet consent letter by DTI 18 December 2006 ¹ referenced a screening exercise by DTI for the pSPA in the Thames Estuary, specifically RTD. It concluded no significant impacts and no need for an AA. It also noted that NE accepted the outcome of screening.
Gunfleet Sands		Within the OTE SPA	No known assessment of the OTE SPA for Gunfleet Sands (GFS) I. It is understood that an Appropriate Assessment exists for GFS II (as referenced in the ES for GFS III), but no copy is held. The GFS III ES referenced the AA for GFS II in relation to the OTE SPA and RTD, specifically that the project 'will not cause an adverse effect on the integrity of the site either alone or in combination with other plans or projects' (AA produced by DBERR, 2008, as referenced in GFS III). The Marine licence for construction of GFS II (L/2011/00065/3) makes no reference to the OTE SPA. Gunfleet Sands III, a 2 turbine demonstration project, assessed the OTE SPA in the Offshore Addendum to the ES (dated October 2011) in relation to the export cable only, finding no change to the existing conclusion of no adverse effect and no impact to the OTE SPA and RTD.

¹ <https://itportal.beis.gov.uk/EIP/pages/projects/ThanetDecision.pdf>

Offshore wind farm	Tier	Location relative to the SPA	Secretary of State ruling on In-combination Impact (or current position if not yet ruled)
Greater Gabbard		Outside of, but functionally linked to OTE SPA	Letter from DTI dated 19 February 2007 ² . Conclusion of no adverse effect on the integrity of the Thames Estuary SPA alone and in-combination. Stated that both the JNCC and NE concur with the AA and agree that the potential impact on birds is not sufficient to withhold consent.
Kentish Flats Extension		Within the OTE SPA	HRA undertaken by DECC dated 15 February 2013 ³ Note – Kentish Flats OWF screened out from the assessment as it was operational prior to SPA classification in 2010. There is no set threshold at which displacement impacts can automatically be considered adverse. Concluded (paragraph 7.32) no adverse effect in-combination with existing wind farms.

² <https://itportal.beis.gov.uk/EIP/pages/projects/GabbardCDecisionConsent.pdf>

³ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010036/EN010036-000830-Habitats%20Regulation%20Assessment.pdf>

Offshore wind farm	Tier	Location relative to the SPA	Secretary of State ruling on In-combination Impact (or current position if not yet ruled)
Galloper		Outside of, but functionally linked to OTE SPA	HRA undertaken by DECC May 2013 ⁴ . Paragraph 3.9 concluded no likely significant effect on the Outer Thames Estuary SPA. Decision supported by Natural England (paragraph 3.7). 89 divers were expected to be displaced by Galloper Wind Farm, finding that ‘the strength of density dependence would need to be as strong or stronger than the most extreme values for immigration into the SPA to result due to displaced birds from GWF. [GWF lies outside the outer Thames Estuary SPA]. NE was, therefore able to advise that an AA is not required in respect of the Outer Thames Estuary.’
London Array		Within the OTE SPA	HRA undertaken by DECC July 2013 ⁵ . Four projects were completed prior to designation of the site in August 2010 and therefore not included in the review but were included in the assessment (Kentish Flats, Thanet, Gunfleet Sands I and Gunfleet Sands II). No adverse effect on site integrity was found in-combination.
East Anglia ONE	2 – consented under construction	Outside of, but functionally linked to OTE SPA	HRA undertaken by DECC dated 28 May 2014 ⁶ . Outer Thames Estuary SPA not screened in for assessment (i.e. no LSE).

⁴ [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010003/EN010003-000012-Galloper%20Offshore%20Wind%20Farm Appropriate%20Assessment.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010003/EN010003-000012-Galloper%20Offshore%20Wind%20Farm%20Appropriate%20Assessment.pdf)

⁵ <https://itportal.beis.gov.uk/EIP/pages/projects/LondonAAAssessmentThames.pdf>

⁶ [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010025/EN010025-000008-Habitat%20Regulations%20Assessment%20\(HRA\).pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010025/EN010025-000008-Habitat%20Regulations%20Assessment%20(HRA).pdf)

Offshore wind farm	Tier	Location relative to the SPA	Secretary of State ruling on In-combination Impact (or current position if not yet ruled)
East Anglia THREE	3 – consented but not under construction	Outside of, but functionally linked to OTE SPA	HRA undertaken by BEIS on 7 August 2017 ⁷ . The applicant identified (paragraph 10.18) the projects contribution during cable laying only as being fewer than 2 deaths per year over 2 consecutive years, with Natural England agreeing the negligible impact to not lead to an AEoI alone or in-combination. Paragraph 10.2 concludes: 'the ExA was satisfied that an adverse effect on the integrity of the Outer Thames Estuary SPA conservation objectives can be excluded both from the Project in-combination with other plans or projects.'
Norfolk Vanguard East & West	4 – application in process	Outside of, but functionally linked to OTE SPA	Not yet determined. SoCG with Natural England ⁸ found that the applicant considered no AEoI alone and in-combination for the OTE SPA, with NE advising the adoption of best practice for vessel operators traversing the site in operation and maintenance will remove the risk of AEoI – position not yet agreed.
Thanet Extension		Outside of, but functionally linked to OTE SPA	Not yet determined – agreed with Natural England to be no AEoI alone (REP3-041).

⁷ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010056/EN010056-002381-East%20Anglia%20THREE%20Habitats%20Regulations%20Assessment%20Dated%207%20August%202017.pdf>

⁸ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-002708-Rep2%20-%20SOCG%20-%202013.1%20Norfolk%20Vanguard%20SoCG%20with%20Natural%20England.pdf>

- 7 It is clear from the information presented in Table 1 above that all projects included within the in-combination assessment for the OTE SPA and RTD for Thanet Extension, for which a project specific HRA has been undertaken by the Competent Authority, formally concluded no AEoI alone and in-combination. It is therefore the position of the Applicant that the evidence available demonstrates that there is currently no AEoI on the OTE SPA. The most recent such assessment is for East Anglia Three, dated August 2017, with that conclusion reached in agreement with NE. The only relevant project other than Thanet Extension to the in-combination assessment is Norfolk Vanguard which, although still progressing through planning and therefore not yet agreed, has agreement in the SoCG with NE that mitigation is available to avoid the risk of an AEoI.

3 Timeline of project changes that reduce the scale of impacts on ornithology receptors

3.1 PEIR / HRA Screening

- 8 The Preliminary Environmental Information Report (PEIR) (APEM, 2017) presented an assessment based on Thanet Extension being at a distance of approximately 4 km from the Outer Thames Estuary (OTE) SPA. It was also based upon the Array Area covering 72.83 km².
- 9 On the basis of Thanet Extension being within approximately 4 km from the OTE SPA, the Applicant decided that this designated site should be brought within scope of the Habitats Regulations Assessment (HRA) for inclusion in the first stage of the HRA – application of the test for a Likely Significant Effect (LSE). This was based on Thanet Extension being within the 8 km of the OTE SPA, the distance advocated by Natural England as appropriate to screen sites in on the basis of an LSE for this species with respect to the potential effect of displacement.

3.2 DCO Submission (ES Chapter and RIAA)

- 10 The assessments within the Environmental Statement Chapter (PINS Ref APP-045/ Application Ref 6.2.4) and RIAA (PINS Ref APP-031/ Application Ref 5.2) were based upon the abundances and densities of seabirds recorded within the Red Line Boundary (RLB) as defined at the time that the PEIR was prepared. Those abundances and densities were described in the Offshore Ornithology Baseline Technical Report (PINS Ref APP-077/ Application Ref 6.4.4.1). The use of the PEIR RLB was in part due to the decision to make a change to the Array Area that was too late to implement in the assessments that were prepared for submission with the Development Application.
- 11 The size of the Thanet Extension Array Area was reduced between the preparation of the PEIR and the Development Application submission by 4.05 km² or 5.56 %, from 72.83 km² to 68.78 km². In addition the distance between the site and the OTE SPA was increased to 6.15 km. The change in these two parameters meant that the assessments in the ES Chapter (PINS Ref APP-045/ Application Ref 6.2.4) and RIAA (PINS Ref APP-031/ Application Ref 5.2) were precautionary, as they were based on the PEIR values, which resulted in a greater abundance of red-throated divers in the prediction of effect and a shorter distance between the Array Area and the OTE SPA than the revised array area and distance would provide.

3.3 Structural Exclusion Zone

- 12 A subsequent amendment to the west of the Array Area has been submitted via a Structural Exclusion Zone (SEZ) at Deadline IV (Appendix 14 to Deadline IV). The SEZ reduces the Array to an area of 59.50 km², which is a reduction of 13.33 km², or 18.30 % compared to that assessed within the ES. The SEZ also reduces the area of the 4 km buffer surrounding the Array (that is used in the calculation of displacement effects when the approach advocated by Natural England is followed) to 196.17 km², which is a reduction of 15.58 km² from the PEIR 4 km buffer area of 211.75 km², or a reduction of 7.94 %.
- 13 The addition of this SEZ also moves the Array Area to a distance of 7.65 km at its nearest point from the OTE SPA. This distance means that the Array Area is now very close to the 8 km distance that Natural England has advocated as the outer limit for any potential influence of a constructed OWF on red-throated diver. This outer limit was defined by Natural England based on a post-construction study of the London Array OWF (APEM 2016) that identified that the displacement effect decays from 100% displacement at 0 km from the OWF to 0% displacement at 8 km from the OWF. Following that example, the potential for displacement by the time a distance of 7.65km is reached is very small. The Applicant is of the view that this study is not relevant to the particular site circumstances of Thanet Extension, and instead represents a highly precautionary approach. As evidenced at Deadline 1 (PINS Ref REP1-023/ Application Ref Deadline 1 – Annex D to Appendix 1: Responses to Relevant Representations), the reason is threefold: that the London Array OWF is a wind farm sited within the OTE SPA, in an area of high red-throated diver density; it is an OWF that is larger than Thanet Extension; and it is sited further offshore. Site specific data collected at Thanet OWF supports this view (as noted in paragraph 16).

4 The Applicant's Position on In-combination Effects

- 14 As noted in paragraph 2, the Applicant put forward an SEZ in the west of the Application Site Boundary at Deadline IV, which in essence positions the Wind Turbine Generators (WTGs), and all other 'above sea structures' further to the east within the Application Site Boundary.
- 15 As a consequence of the SEZ, the nearest a WTGs could be positioned to the OTE SPA boundary is at a distance of 7.65 km, an increase of 3.65 km (48% increase) from the PEIR array boundary that formed the basis of the assessment of displacement within the ES and the RIAA. The reduction in Thanet Extension's development footprint would be by 18.3 % also, from 72.83 km² which formed the basis of previous assessments to 59.50 km², reducing the potential area of influence of displacement for red-throated diver. The reduction in the 4 km buffer as a consequence of the SEZ is of 15.58 km², from 211.75 km² to 196.17 km².
- 16 The application of these two factors on the assessment of potential displacement of red-throated divers from the Outer Thames Estuary SPA would be further reductions to the level of effect and resulting impact. In particular, the revised distance between Thanet Extension and the OTE SPA, at 7.65 km, is within a 5% margin of the maximum distance that Natural England has identified from the London Array OWF post-construction study that red-throated divers might show displacement behaviour from an OWF. At such a distance the scale of any displacement effect will most certainly not be 100% and with a very high degree of certainty based on an examination in the evidence that Natural England rely on (see Figure 20 of APEM 2016) it can be stated to be very close to, if not, zero percent displacement.
- 17 It continues to be the Applicant's position that the evidence from post-construction monitoring of the existing Thanet OWF is that the distance at which the percentage displacement falls to zero at this particular site is less than 4 km. It is also the Applicant's position that birds have been recorded within the array itself; evidence that displacement is not 100% even within Thanet OWF. These facts identify the highly precautionary nature of the approach to assessment of effects either alone, or more importantly in-combination, by Natural England.

- 18 The Applicant is of the opinion that even when based on Natural England's highly precautionary criteria, this project may now be considered to be outside of any influence on this species when in the SPA. Therefore, when account is taken of the implementation of the SEZ, which serves to increase the separation distance between the project and the OTE SPA, the Applicant considers it to be clear that the project is so small that, as well as having no adverse effect on integrity when considered alone, cannot make any appreciable contribution to the calculation of an in-combination displacement total from operational, under construction and consented OWFs on the red-throated diver population of the Outer Thames Estuary SPA. As noted in section 2 above, the existing position from the most recent HRA by a Competent Authority (for East Anglia Three) as regards an in-combination effect on the RTD population of the OTE SPA is of no AEol.

5 Overview of Natural England's Position prior to SEZ

5.1 Red-throated diver (and the Outer Thames Estuary SPA)

- 19 The methods for undertaking the in-combination assessment for red throated diver are broadly agreed between Natural England and the Applicant within the current SoCG (PINS Ref REP3-0414/ Application Ref Appendix 25 to Deadline 3 Submission). Natural England provided clarity that, despite some differences that could be applied to the methodology, Natural England acknowledge that the methodology used does not change the relative contribution of Thanet Extension which is small compared to consented offshore wind farms.
- 20 Natural England further advised (REP3-089) that Thanet Extension will not have an adverse effect on the integrity on the red-throated diver population of the Outer Thames Estuary SPA when considered alone. However, Natural England considers that it is not possible to rule out an adverse effect on integrity when the project is considered in combination with consented and operational offshore wind farm projects, although it has been recognised at various stages within the evolution of the statement of common ground that the contribution is not material, not appreciable, and small.
- 21 Natural England provided additional clarification on their position with regard to Thanet extension in the context of other OWF projects (REP3-089) by suggesting that:

Prior to the submission of Thanet Extension, Natural England had already advised that it was not possible to rule out an adverse effect on integrity on the [Outer Thames Estuary] SPA from operational and consented projects due to displacement effects. Thanet Extension lies 8 km from the SPA. Displacement effects on red-throated diver from post-construction monitoring appear to vary between projects, but have been reported up to and beyond this distance, and there is therefore potential for the proposal to exert additional displacement pressure on the SPA. This in-combination contribution is in all likelihood very small in the context of impacts from other OWF projects which lie within, rather than some distance beyond, the SPA.

- 22 It should be noted that Natural England's reference to Thanet Extension being 8 km from the SPA was in error at that point in time, as the SEZ had not been discussed. Therefore, it is correct to point out that at that stage the western extent of Thanet Extension was proposed to be 6.15 km from the SPA (with a major shipping lane lying between Thanet Extension and the OTE SPA).
- 23 It is the Applicant's considered interpretation of the views expressed by Natural England that their concerns arise from consents for OWFs that have already been granted and not from the predicted impacts of Thanet Extension. As confirmed in section 2 above, all previous assessments by the relevant Competent Authority with respect to the OTE SPA and RTD, specifically for OWFs, have concluded no AEoI alone and in-combination.
- 24 The Applicant also considers that Natural England's position, once they have had time to consider the implications of the SEZ, may align with the conclusion that Thanet Extension will not have an adverse effect on the integrity of the red-throated diver population of the Outer Thames Estuary SPA as there is no effect on red-throated diver and consequently there is no contribution to an in-combination effect.

6 Conclusion of No Adverse Effect on Integrity (AEoI) for OTE SPA

- 25 Both the Applicant and Natural England are in agreement that Thanet Extension alone has no adverse effect on the integrity of the RTD feature of the Outer Thames Estuary SPA.
- 26 It is the Applicant's position that the addition of, at most, a single predicted red-throated diver mortality per annum (that mortality being based on the PEIR array boundary and therefore assuming a 4km distance from the OTE SPA) occurring in marine waters that are within, or close to, the proposed Thanet Extension Array Area but outside of the Outer Thames Estuary SPA would not cause an adverse effect on integrity in combination. No such effect has been found to exist before the Thanet Extension was proposed. The Thanet Extension would make no appreciable contribution to the in-combination effects of other windfarms. The evidence presented above, specifically that in relation to the increase in distance and reduction in array area following the implementation of the SEZ, would suggest that the risk of RTD mortality is now substantially reduced from that initial prediction of a single bird, further strengthening the argument that no adverse effect on integrity will result.

7 References

- APEM (2017). Thanet Extension Offshore Wind Farm: Preliminary Environmental Information Report, Volume 2, Chapter 4, Offshore Ornithology. Vattenfall, November 2017.
- APEM (2016). Assessment of displacement impacts of offshore windfarms and human activities on red-throated divers and alcids. Natural England Commissioned Report NECR227, December 2016.
- Vattenfall (2018b). *Norfolk Vanguard Offshore Wind Farm – The Applicant’s Response to Section 51 Advice from The Planning Inspectorate*. October 2018, Document Reference: PB4476-008-001.