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THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010

East Anglia TWO Offshore Wind Farm

Appendix A4 to the Natural England Deadline 1 Submission

Natural England's recommended approach to mitigating and assessing displacement effects on red throated diver from Outer Thames Estuary Special Protection Area

For:

The construction and operation of East Anglia Two Offshore Windfarm, a 900MW windfarm which could consist of up to 75 turbines, generators and associated infrastructure, located 37km from Lowestoft and 32km from Southwold.

Planning Inspectorate Reference: EN010078

2nd November 2020



Appendix A4 Natural England's recommended approach to mitigating and assessing displacement effects on red throated diver from Outer Thames Estuary Special Protection Area

This document is applicable to both the East Anglia ONE North (EA1N) and East Anglia TWO (EA2) applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's (ExA) procedural decisions on document management of 23rd December 2019. Whilst for completeness of the record this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it again for the other project.

1. Overview

In our relevant representations/written representations [RR – 059] Natural England highlighted that one of the critical issues concerning offshore ornithology is the impact of displacement on red-throated diver from the Outer Thames Estuary Special Protection Area (OTE SPA). Natural England is particularly concerned that the location of the EA1N array, which abuts the SPA boundary, is likely to cause displacement effects that will result in a reduction in the availability of diver habitat in part of the SPA. The change in the distribution of divers within OTE SPA is incompatible with meeting the Conservation Objectives for the site, and will result in an adverse effect on site integrity, both alone and in-combination with other plans and projects. To address the risk of adverse impacts on the SPA, we strongly advise that the boundary of EA1N is also moved from the SPA, by at least 10km, and that EA2 (already 8.3km from the SPA) is also moved out to at least 10km from the SPA.

Natural England considers that relocating both arrays beyond 10km of the SPA may have the potential to avoid an adverse effect on integrity, subject to this being tested through a sufficiently detailed assessment of impacts. However, the methodology used in the Environmental Statement (ES) does not allow such an assessment. Currently, the report to inform the Appropriate Assessment (AA) does not assess the full extent of potential displacement i.e. out to and beyond 10km, and does not take account of the ongoing cumulative displacement effects from operational windfarms within the SPA over the lifetime of those projects, which have significantly reduced the availability of supporting habitat within the SPA.



A Review of Consent under Regulation 33 of The Offshore Conservation of Habitat and Species Regulations 2017 (as amended) has not been completed for the Outer Thames Estuary SPA¹. Natural England advise that prior to the authorisation of any subsequent projects the ongoing cumulative impacts of these operational windfarms, which Natural England are concerned are greater than originally predicted, need to be assessed. This is required because it is important that all plans and projects are assessed alone and, where relevant, with respect to their contribution to cumulative impacts.

Accordingly, Natural England's advised approach is that where cumulative potential effects are identified as being significant, they are considered together in detailed Appropriate Assessments. These assessments must not ignore existing impacts on the SPA caused by operational wind farms and must examine the in-combination effect of EA1N and EA2, with each other, with those of the existing wind farms, and with other projects that have consent, but are not yet operational, on the conservation objectives for the SPA. When considering the combined effects of these plans or projects, the combined effect on the ecological functioning of the site interest feature can be greater than the sum of each individual element.

To enable the competent authority to carry out a comprehensive and thorough appropriate assessment, we therefore advise that a full and robust assessment is undertaken using a series of 1km buffers out to 12.5km for both projects and then other plans and projects causing displacement effects on the SPA, including operational windfarms. This will help to inform Natural England's consideration of the appropriateness of the recommended mitigation of moving the arrays away from the SPA, and to properly assess the existing extent of displacement and these projects' contribution to them.

2. Mitigation

Natural England's advice remains that in order to mitigate a potential adverse effect alone from EA1N on the Outer Thames Estuary SPA the proposed array should be re-configured so the boundary is at least 10km from the boundary of the SPA. Moving EA1N and EA2 further from the SPA boundary will minimise displacement impacts, and if moved far enough away may avoid any impact at all. Mitigating the predicted impacts to a point where there is no in-combination contribution is particularly important, considering Natural England's advice that an adverse effect on integrity cannot be ruled out on the OTE SPA from operational windfarms.

¹ Please see NEs Deadline 1 Appendix A5 on NE latest advice on the SPA Review of Consent Screening



3. Assessing full extent of displacement

As highlighted in our relevant representations/written representations [RR-059] there is a growing body of evidence for displacement effects beyond 10km (Allen et al, 2020, Vilela et al 2020).

As agreed at the workshop on 28th July 2020 empirical post construction evidence from London Array Offshore windfarm is demonstrating that the displacement is beyond 11.5km. Therefore a full and robust assessment needs to be undertaken, using a series of 1km buffers out to 12.5km for both EA1N and EA2 and other plans and projects causing displacement effects on the SPA, including all operational windfarms within 10km of the SPA.

Therefore, Natural England advises that a full and detailed in-combination assessment of impacts on the SPA is carried out, which:

1. Assesses displacement effects alone from EA1N/EA2 out to at least 12.5 km;
2. Fully takes account of baseline disturbance on the SPA from existing windfarms, and what EA1N/EA2 will add to that total;
3. Then consider remaining residual impact in-combination with the impact of other plans and projects.

Should the EA1N/EA2 arrays not be relocated from their present position so they are at least 10km from the SPA, this assessment would need to quantify any in-combination contribution from these projects. If EA1N/EA2 do not intend to move their arrays further from the SPA, this assessment would also inform any derogations submission that might be required by the Examining Authority/BEIS, by precisely quantifying the impact of the proposals and therefore informing the alternative solutions test and the requirement for compensatory measures.

4. General points on the assessments

As stated in our relevant representations the revised assessments need to be in the context of the Conservation Objectives for the OTE SPA. The conservation objectives for the OTE SPA are to ensure that, subject to natural change, the integrity of the site is maintained or



restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

The supplementary advice on the site's conservation objectives describes the range of ecological attributes that are most likely to contribute to a site's overall integrity. The outputs of these assessments should therefore be considered with respect to the following attributes:



Attribute	Target
Disturbance caused by human activity	Reduce the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed.
Non-breeding population: abundance	Maintain the size of the non-breeding population at a level which is at or above 18,079 individuals, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent (our emphasis).
Supporting habitat: extent and distribution of supporting habitat for the non-breeding season	Maintain the extent, distribution and availability of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding) at the following levels: Subtidal sand (220,295.55); Subtidal coarse sediment (73,606.64); Subtidal mixed sediments (62,100.63 ha); Subtidal mud (12,549.14 ha); Circalittoral rock (335.2 ha); and Water column.

The assessment should also fully consider the impacts of the construction phase (including cable installation) and Operation & Maintenance (O&M) works, in addition to effects from the array itself. This should consider vessel movements (including cabling vessels) and helicopter traffic. This will involve considering O&M works for the existing offshore windfarms where relevant.

5. Assessing impacts from EA1N/EA2 Alone

The first step is to determine what the full impact of displacement from EA1N/EA2 alone may be. This will require considering displacement effects beyond the 4km currently considered in the Environmental Statement. Assuming that displacement effects extend only to 4km from the proposed array predicts impacts affecting 33.2km² of the OTE SPA, which represents 0.88% of the SPA area. However, when using a 10km buffer around the array the overlap with the SPA is 121.40 km², which represents 3.09% of the SPA that will be subject to some degree of displacement.

We acknowledge that displacement will not be 100% throughout the distance over which displacement effects occur, and there will be a gradation of displacement which will decrease with distance from the windfarm. Nevertheless there is a growing body of evidence that displacement of red throated diver occurs at distances much greater than in earlier studies, which were limited by the size of the study area and/or use of inappropriate survey platform (boat-based surveys).



A recent BioConsult report (Vilela et al 2020) estimating diver displacement in the German North Sea calculated a displacement distance in spring of 10.2 km. The German Bight study was based on the entire study area and for all available data over an 18 year period. This, in tandem with other studies with a suitably extensive survey area, provides a robust evidence base for displacement occurring up to and beyond 10km from operational windfarms. Vilela et al does caution that the available results can only be transferred to other areas outside the study area to a very limited extent, and therefore need to be tested on a case by case basis, but does provide evidence that divers are displaced beyond 10km. This is consistent with the MacArthur Green report to The Crown Estate which advised that new offshore windfarms leasing areas should be a minimum of 10km from the outer edge of Greater Wash SPA, and the latest evidence from the OTE SPA. Natural England has recently provided comments on the draft final year post-construction ornithological monitoring report for London Array OWF, during which displacement effects have been detected out to 11.5km from the Array.

Therefore we advise that an assessment is undertaken, assuming displacement is based on displacement occurring up to 12.5 km. We acknowledge that the range of displacement within each 1 km band from the proposed windfarm will decrease the further the distance from the windfarm, and a range of displacement within each 1km will need to be agreed.

6. Assessing impacts against current levels of displacement from constructed offshore windfarm projects

It is important to consider what the additional displacement from this project will add to the current level of displacement from operational projects within the SPA, particularly in the absence of a Review of Consent for the OTE SPA covering all these projects. Natural England are already of the view that an adverse effect on integrity on Outer Thames Estuary SPA cannot be ruled out (Natural England's response to BEIS dated 24th May 2013). Therefore in addition to an adverse effect alone from EA1N, additional displacement from EA1N/EA2 will increase the likelihood of an in-combination adverse effect on integrity, due to the conservation objectives relating the distribution of divers not being fulfilled.

The survey data that informed the current boundary of the SPA was based on surveys undertaken before most of the relevant offshore windfarms were constructed. This fact, together with Natural England's advice that already an AEOI cannot be excluded from



existing windfarms, means it is crucial that the Examining Authorities have a clear understanding of the existing level of impacts from the operational windfarms, in order to then consider in-combination effects. We advise that an assessment of the level of displacement from the projects that are now operational are considered including:

- London Array
- Gunfleet Sands I,II and III
- Kentish Flats and Kentish Flats Extension
- Greater Gabbard
- Thanet.

The outputs should be considered in-combination with those from the EA1N/EA2 assessment and with reference to the relevant Conservation Advice attributes.

Evidence from existing windfarms indicates that an AEOI in-combination from existing OWFs cannot be ruled out. For the OWFs within the SPA the windfarm footprint alone 4.2% of the SPA is affected, with 2km buffer its 9.9% with a 4km buffer its 17.7% and 10km then 47.43% of the SPA is subject to some degree of displacement. Therefore it is our view that based on the scale of the existing impacts an AEOI cannot be excluded from the additional loss of supporting habitat as proposed by the East Anglia 1N and East Anglia 2 projects. In that context we consider there being limited benefit in undertaking an assessment of the change in distribution of actual numbers of divers. Nevertheless should the applicant want to consider the numbers of divers displaced Natural England is content to discuss this. If this analysis of numbers of divers is planned, Natural England suggests that the gradation is based on the figures on an average of distances from published studies (Webb et al 2017; Vilela et al 2020)

7. In-combination assessment with other plans and projects

We note that the only project 'in planning' which is considered by the Applicant is the Sizewell C power station. It should also be noted that some projects are planned but not yet in the planning system, e.g. Greater Gabbard Extension. The location of the proposed 'extensions' are known, therefore it is possible to include in the assessment of total area of SPA affected, and numbers of RTDs displaced, based on the datasets held by JNCC and Natural England, that has been provided to SPR.



References

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