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RENEWABLES

East Anglia ONE North and East Anglia TWO Offshore Windfarms

Deadline 4 Onshore Ecology Clarification Note

Applicant: East Anglia TWO Limited and East Anglia ONE North Limited
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Applicable to **East Anglia ONE North** and **East Anglia TWO**



Revision Summary

Rev	Date	Prepared by	Checked by	Approved by
01	13/01/2021	Paolo Pizzolla	Lesley Jamieson	Rich Morris

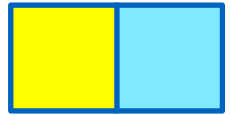
Description of Revisions

Rev	Page	Section	Description
001	n/a	n/a	Final for submission at Deadline 4



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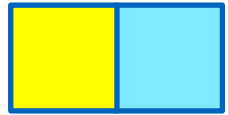
Glossary of Acronyms

DCO	Development Consent Order
ES	Environmental Statement
IOF	Important Ornithological Features
SoCG	Statement of Common Ground



Glossary of Terminology

Applicants	East Anglia TWO Limited / East Anglia ONE North Limited
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia TWO / East Anglia ONE North project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO / East Anglia ONE North project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Onshore substation	The East Anglia TWO / East Anglia ONE North substation and all of the electrical equipment within the onshore substation and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia TWO / East Anglia ONE North project.



1 Introduction

1. This clarification note has been prepared by East Anglia TWO Limited and East Anglia ONE North Limited (the Applicants) to clarify aspects of the East Anglia TWO project and the East Anglia ONE North project (the Projects) Development Consent Order (DCO) applications (the Applications).
2. This clarification note relates to onshore ecology matters and addresses queries raised by East Suffolk Council and Suffolk County Council (the Councils) through the Statement of Common Ground (SoCG) process.
3. This document is applicable to both the East Anglia ONE North and East Anglia TWO DCO applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's procedural decisions on document management of 23rd December 2019 (PD-004). Whilst this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it for the other project submission.

1.1 Purpose

4. In response to particular matters raised by the Councils regarding the assessment presented in **Chapter 22 Onshore Ecology** of the Environmental Statement (ES) (APP-070), this clarification note presents the following:
 - A consideration of the potential for impacts on sensitive ecological receptors (e.g. bats, birds) arising from predicted day-time and night-time operational noise levels at the onshore substations.



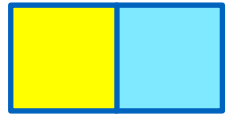
2 Potential Impacts of Operational Noise

2.1 Background

6. Potential impacts upon sensitive fauna are considered within **Chapter 22 Onshore Ecology** (APP-070) and **Chapter 23 Onshore Ornithology** (APP-071) of the ES.
7. As per the **Deadline 4 Project Update Note** (document reference ExA.AS-2.D4.V1) and **Noise Modelling Clarification Note** (document reference ExA.AS-8.D4.V1), the Applicants have committed to a maximum operational noise rating limit of 32dBA at any time at a free field location immediately adjacent to SSR2 and SSR5 NEW. In addition, the Applicants have also committed to an additional noise sensitive location, within the vicinity of SSR3 (Little Moor Farm) being included within Requirement 26 and 27 of the **draft DCO** (REP3-011). The maximum operational noise rating limit applied to SSR3 is 31dBA. The **draft DCO** (REP3-011) will be updated and submitted at Deadline 5 to reflect these changes.
8. Furthermore, **section 22.6.2.2 of Chapter 22** (APP-070) states that, *“the baseline ornithology survey results (refer to Chapter 23 Onshore Ornithology) as well as the 2018 Phase 1 Extended Habitat Survey and 2019 Phase 1 Addendum results suggest that the onshore substation and National Grid substation are located within an area of low ecological value. As a consequence, disturbance from lighting and noise is predicted to be of minor adverse and therefore not significant and only have the potential to affect ecological receptors in the immediate vicinity of the onshore substation and National Grid substation locations”*.
9. **Section 23.6.4.1 of Chapter 23** (APP-071) summarises the conclusions made in relation to operational noise as follows: *“With the exception of barn owl, a species tolerant of human presence, no IOFs [Important Ornithological Features] are likely to be found in proximity to the onshore substation or National Grid infrastructure”*.

2.2 Onshore Ecology

10. Studies exist in relation to anthropogenic noise effects on badgers *Meles meles*, water vole *Arvicola amphibius*, and UK reptile species, but none provide conclusive evidence regarding noise leading to behavioural or other deleterious effects (Radford *et al.*, 2012). Evidence does exist of potential impacts within 50m of anthropogenic noise sources (e.g. road traffic) for species of ‘gleaning’ bats (i.e. those that listen for prey-generated sounds when hunting), leading to increased foraging times (Siemers and Schaub, 2010). ‘Gleaning’ species of bat,

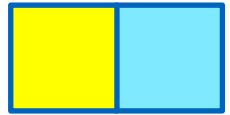


which include the brown long-eared bat *Plecotus auratus* and Natterer's bat *Myotis nattereri*, were not recorded in the vicinity of the onshore substation locations during the 2019 Bat Survey (APP-507). Other, echolocating species appear to be at a lower risk of being directly affected by anthropogenic noise (Radford *et al.*, 2012).

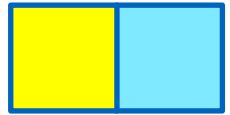
11. **Figure 6** of the **Revised Noise Modelling Clarification Note** (document reference ExA.AS-8.D4.V1) submitted at Deadline 4 (included here in **Appendix 1**) shows that noise levels are anticipated to be at most 39dBA in the area immediately surrounding the onshore substations. The nearest habitats with the potential to support ecological receptors are the semi-natural broadleaved woodland at Laurel Covert (approximately 20m to the east) and a small unnamed woodland to the immediate west. Approximately 0.25ha of these woodlands fall within the area experiencing noise levels of 39dBA. However, noise levels will drop rapidly beyond this, reaching existing background levels further into the Laurel Covert. The noise type generated during operation will be continuous, which is the least likely to give rise to disturbance effects (Hockin *et al.*, 1991).
12. The ecological receptors recorded in the vicinity of the onshore substation locations include badger, bat (common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, serotine *Eptesicus serotinus* (and Leisler's *Nyctalus leisleri*), noctule *Nyctalus noctula*, and barbastelle bats *Barbastella barbastellus*) and great crested newt. These are species which habitually occupy habitats in proximity to anthropogenic infrastructure and the evidence base does not indicate that introduction of noise sources are likely to change their existing behaviour.
13. This information leads to the conclusion that it is highly unlikely that operational noise will interfere with the behaviour of any sensitive receptors which utilise Laurel Covert or other surrounding habitats.

2.3 Onshore Ornithology

14. Ornithological receptors can be sensitive to anthropogenic activity, including visual, light disturbance and noise disturbance. Continuous, persistent anthropogenic noise, such as that produced by an operational substation, is categorised as 'passive low-level continuous' noise, and ornithological receptors typically become accustomed to it (Hockin *et al.*, 1991).
15. As noted in **Chapter 23** (APP-071), the only IOF recorded within the vicinity of the onshore substation locations is the barn owl *Tyto alba*. Ruddock and Whitfield (2007) indicate that the barn owl is a species which is highly tolerant to anthropogenic activity, and for example, has a disturbance range of only 5-10m. Given this high tolerance to disturbance, it is considered highly unlikely that

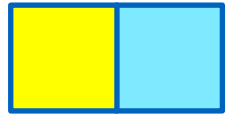


operational noise generational at the substation would give rise to any change in activity within the local barn owl population.



3 Conclusion

16. From a review of the available literature it can be determined that anthropogenic noise can affect 'gleaning' bat species causing increased foraging times; however no such species were recorded in the vicinity of the onshore substation locations during the 2019 Bat Survey (APP-507). Likewise, most ornithological receptors typically become accustomed to continuous, persistent anthropogenic noise. Studies are generally inconclusive regarding noise leading to behavioural or other deleterious effects on species such as *Meles meles*, water vole *Arvicola amphibius*, and UK reptile species.
17. The noise type generated by the onshore substations during operation will be continuous, which is the least likely to give rise to disturbance effects.



4 References

Hockin, D., Ounsted, M., Gormant, M., Hillt, D., Kellert V. and Barker, M. A. (1991) Examination of the Effects of Disturbance on Birds with Reference to its Importance in Ecological Assessments. *Journal of Environmental Management* (1992) 36,253-286.

Radford, A., Morley, E. and Jones, G. (2012) *The Effects of Noise on Biodiversity (NO0235) Final Report for Defra. University of Bristol.*

Ruddock, M. and Whitfield, D. P. (2007) *A Review of Disturbance Distances in Selected Bird Species, A report from Natural Research (Projects) Ltd to Scottish Natural Heritage.*

Siemers, B.M., and Schaub, A. (2010) *Hunting at the highway: traffic noise reduces foraging efficiency in acoustic predators. Proceedings of the Royal Society B- Biological Sciences. Published: 17 November 2010.*



Appendix 1



Legend

- Western Substation
- Eastern Substation
- Non-Residential Amenity Noise Receptor Locations
- Background Noise Level (29dBA)
- Permanent Diversions

Public Right of Way Status

- Footpath
- Bridleway

dBA at 1.5m AOD

- 24.5 < 25.5
- 25.5 < 26.5
- 26.5 < 27.5
- 27.5 < 28.5
- 28.5 < 29.5
- 29.5 < 30.5
- 30.5 < 31.5
- 31.5 < 32.5
- 32.5 < 33.5
- 33.5 < 34.5
- 34.5 < 35.5
- 35.5 < 36.5
- 36.5 < 37.5
- 37.5 < 38.5
- 38.5 < 39.5
- 39.5 <

Note: Areas based on revised substation footprint as presented in Project Update Note submitted at Deadline 2 (REP2-007)



Rev	Date	By	Comment	Approved:
2	11/01/2021	AB	Second Issue.	Prepared: AB
1	08/01/2021	AB	First Issue.	Checked: HM
				Approved: BD

1:6,000
Scale @ A3
0 150 300 Metres

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East Anglia ONE North and TWO

Scenario C Operation Phase Noise Emission Contour Bands

Drg No	EA1N-EA2-DEV-DRG-IBR-001263
Rev	2
Date	11/01/21
Figure	6
Coordinate System:	BNG
Datum:	OSGB36