

SCOTTISHPOWER  
RENEWABLES

# East Anglia ONE North and East Anglia TWO Offshore Windfarms

## Deadline 3 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**

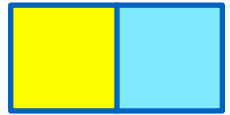


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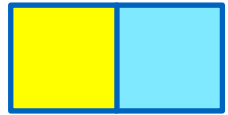
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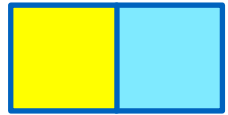
## Glossary of Acronyms

CCS	Construction Consolidation Site
DCO	Development Consent Order
EclA	Ecological Impact Assessment
EMP	Ecological Management Plan
ES	Environmental Statement
HDD	Horizontal Directional Drilling
IAQM	Institute of Air Quality Management
NOx	Nitrogen Oxide
NRMM	Non-Road Mobile Machinery Emissions
OLEMS	Outline Landscape and Ecological Management Strategy
O <sub>3</sub>	Ozone
SoCG	Statement of Common Ground
SO <sub>2</sub>	Sulphur Dioxide
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest



## Glossary of Terminology

Applicants	East Anglia TWO Limited / East Anglia ONE North Limited
Construction Consolidation Site	Compounds associated with the onshore works which may include elements such as hard standings, lay down and storage areas for construction materials and equipment, areas for vehicular parking, welfare facilities, wheel washing facilities, workshop facilities and temporary fencing or other means of enclosure.
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.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables (which may be laid directly within a trench, or laid in cable ducts or protective covers), up to two fibre optic cables and up to two distributed temperature sensing cables.
Onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, landscaping and ecological mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
SPA crossing	Work No. 12 which comprises the installation of cables within the boundary of the Sandlings Special Protection Area and Leiston - Aldeburgh Site of Special Scientific Interest.
SPA crossing buffer	200m buffers extending east into Work No. 11 from the SPA crossing and extending west into Work No. 13 from the SPA crossing .
Trenchless technique	A method of installation that allows ducts and cables to be installed under an obstruction or area without breaking open the ground and digging a trench (examples of such techniques include horizontal directional drilling, thrust boring, auger boring and pipe ramming).



# 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 Suffolk Wildlife Trust through its Relevant Representation (RR-086), and 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 23<sup>rd</sup> 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 Suffolk Wildlife Trust and the Councils regarding the assessment presented in **Chapter 22 Onshore Ecology** of the Environmental Statement (ES) (APP-070), this clarification note presents the following:
  - Information regarding the level of importance assigned to semi-natural broadleaved woodland in **Chapter 22** (APP-070); and
  - An assessment of impacts to ecological receptors as a result of Non-Road Mobile Machinery emissions (NRMM).
5. The following sections of this clarification note address the above-mentioned matters in turn.



## 2 Semi-Natural Broadleaved Woodland

6. Within its Relevant Representation (RR-086), Suffolk Wildlife Trust states:

*“We wish to make the following comments in respect of Onshore Ecology: In **Chapter 22 (Onshore Ecology) 22.5.2.3** it is omitted that semi-natural broadleaved woodland is a UK Priority habitat under the classification Lowland Mixed Deciduous Woodland (Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)). Applying the criteria in Table 22.8, this habitat is defined as ‘medium importance’ rather than being assigned to ‘high’ as would be the case for UK Priority habitats and this then has a bearing on impact significance. Consequently, we disagree that the loss of 1.1 hectares of semi-natural broadleaf woodland is ‘low’ for long term duration, with only a temporary residual impact of ‘minor adverse’ after mitigation.*

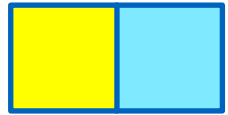
*We note that the mitigation proposed includes the planting of replacement woodland to result in ‘no net loss of trees’ following the completion of the works, although planting of trees cannot be undertaken on the cable route itself. We determine this planting is not mitigation and instead forms compensation under the mitigation hierarchy. Given our comments in the above paragraph, we consider the current measures proposed do not sufficiently address the impacts upon semi-natural woodland and that further compensatory habitat is required”.*

7. As stated in **section 22.5.2.3** of **Chapter 22** (APP-070), areas of semi-natural woodland were recorded at 14 locations across the onshore development area. These areas of woodland represent a coverage of approximately 7ha, which in turn represents approximately 2.6% of the habitats within the onshore development area.
8. The Applicants note that paragraph 104 of **Chapter 22** (APP-070) incorrectly classifies semi-natural broadleaved woodland as being of medium importance. In accordance with the criteria set out in **Table 22.8** (APP-070), the correct classification is in fact **high importance**.
9. As presented in **Table 22.18** (APP-070), it is identified that 1.1ha of semi-natural broadleaved woodland will be lost during the construction of the Projects. In accordance with the criteria presented in **Table 22.9** (APP-070), the magnitude of this effect is considered to be **low** accounting for the amount of semi-natural broadleaved woodland across Suffolk county. The loss will be **long-term** in duration.



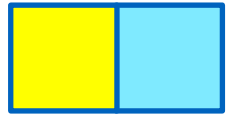
10. As a **high importance** receptor, this loss of 1.1ha of semi-natural broadleaved woodland will therefore result in a **moderate adverse** impact, which is considered **significant**.
11. As presented in **section 22.6.1.4.2** of **Chapter 22** (APP-070), the following mitigation measures, as secured within the Ecological Management Plan (EMP) and detailed within the **Outline Landscape and Ecology Management Strategy** (OLEMS) (an updated version has been submitted at Deadline 3, document reference 8.7), will be employed:
  - Micrositing at the detailed design stage to avoid damage to / loss of trees where practicable.
  - Pre-construction assessment of all trees to be removed by a suitably qualified arboriculturist. This will include identification of mitigation of potential impacts to Tree Protection Orders, which will be agreed with the relevant planning authority post-consent;
  - Ensuring that at least an equivalent area of lost woodland is replanted following completion of the works (trees cannot be replanted directly above the buried cables);
  - To avoid creating a wind tunnel effect, replacement planting in the form of woodland edge habitat to allow future formation of primary, secondary and tertiary succession to ensure there is a sufficient amount of scrub, small trees / shrubs and woodland understorey as well as trees being replanted. This will ensure that woodland is not thinned too extensively and that there is enough vegetation to avoid the wind tunnel effect. The **OLEMS** (an updated version has been submitted at Deadline 3, document reference 8.7) provides further detail on the feasibility of planting above the onshore cables;
  - Root protection areas to be fenced off during construction for trees in proximity to the works in that area to be retained;
  - Introduce biosecurity measures, including cleaning of vehicles, equipment and personnel upon leaving infected areas, during construction to minimise the spread of ash dieback; and
  - A mitigation plan will be produced and agreed with Natural England and included as part of the EMP, as secured under the requirements of the **draft DCO** (an updated version has been submitted at Deadline 3, document reference 3.1).
12. In addition to the mitigation measures above, where trees and woodland are to be removed, the Applicants have committed to the following:
  - Where the onshore cable route interacts with the woodland to the east and west of Aldeburgh Road, the onshore cable route working width will be





reduced from 32m to 16.1m (save for 40m buffer around the Hundred River). Where East Anglia TWO is constructed in parallel with East Anglia ONE North, the onshore cable route working width within the woodland to the east and west of Aldeburgh Road will be 27.1m (save for 40m buffer around the Hundred River).

- Undertaking pre-construction surveys in line with British Standard 5837:2012 to accurately map the position of trees, record tree condition, tree value (including veteran status), tree root protection zones and the potential to support roosting bats to inform micro-siting of onshore infrastructure and opportunities for replacement planting;
  - Planting replacement woodland of an equivalent area to the woodland lost during construction of the Projects following completion of the onshore works, taking into account that trees cannot be planted directly above buried cables;
  - At Aldeburgh Road, introducing replacement planting in the form of woodland edge habitat to allow future formation of primary, secondary and tertiary succession and to avoid creating a wind tunnel effect; and
  - Implementing a joint annual inspection of all replacement planting by the Applicants and the relevant planning authority at the end of each growing season for each year of the aftercare period, with one to one replanting of failed plants to be undertaken for the first five years.
13. Any mitigation measures in relation to woodlands that are additional to those within the **OLEMS** (an updated version has been submitted at Deadline 3, document reference 8.7), will be included within and secured through the final EMP and/or final Landscape Management Plan, where appropriate. These management plans will be prepared post-consent and submitted to the relevant planning authority for approval prior to the commencement of onshore works.
14. Following implementation of the agreed mitigation measures, there will be no net loss of trees as the replacement woodland planting will be of an equivalent area to that which is lost during construction. However, there remains a temporary loss of trees, until such time as the replacement woodland has become established. This temporary loss would result in an effect of **low** magnitude, on a **high importance** receptor, representing a temporary residual **moderate adverse** impact that would be **significant**. However, given the commitment to implement the proposed mitigation measures and the replacement woodland planting that will ensure no net loss of trees in the long term, there will be a reduction in the duration of the effect. The magnitude will reduce to **negligible** over time, which will ultimately result in a **minor adverse** impact in the long-term.

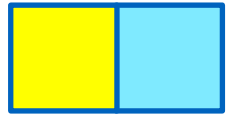


### 3 NRMM Impacts on Ecological Receptors

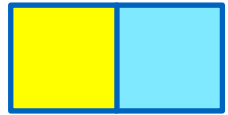
15. At the request of the Councils through the SoCG process, a quantitative assessment of the impacts of emissions from NRMM and generators used during simultaneous construction of the Projects (i.e. cumulative construction Scenario 1) has been undertaken; this is presented in the **Deadline 3 Air Quality Clarification Note** (document reference ExA.AS-16.D3.V1) submitted to the Examinations at Deadline 3.
16. The assessment considers the impact of emissions from the following activities:
  - NRMM and generators used for open trench installation of the onshore cables;
  - NRMM and generators used for trenchless installation of the onshore cables;
  - NRMM and generators used within the Construction Consolidation Sites (CCSs); and
  - Emissions from vehicles travelling along the haul road.
17. Regarding installation of the onshore cables across the Sandlings Special Protection Area (SPA), the following scenarios have been considered (further details on the scenarios is provided with the **Outline SPA Crossing Method Statement** (REP1-043)):
  - Scenario A – the SPA is crossed using an open trench technique;
  - Scenario B – the SPA is crossed using a trenchless technique, with works being located outside a 200m buffer around the SPA and with no seasonal restrictions; and
  - Scenario C – the SPA is crossed using trenchless techniques, within a 200m buffer around the SPA and with working restrictions between 14<sup>th</sup> February to 31<sup>st</sup> August due to possible impacts on breeding birds.
18. The exact locations of emission sources will not be known until detailed design of the Projects. For example, the final location of trenchless technique works at the landfall will be dependent on geotechnical considerations. Similarly, the exact location of plant which may be used for the SPA crossing is also unknown. Somewhat conservative assumptions have therefore been made regarding the location of emission sources in relation to the proximity to ecological receptors.



19. **Section 2.1.5** and **Table 2.6** of the **Deadline 3 Air Quality Clarification Note** (document reference ExA.AS-16.D3.V1) details the receptors that have been included within the air quality dispersion model within the designated sites closest to the emission sources. The assessment comprises a qualitative review of information presented within **Chapter 6 Project Description** of the ES (APP-054).
20. Receptors have selected based on their proximity to the works and the appropriate habitats. Critical Loads have been determined in consultation with the project air quality specialist.
21. In the vicinity of ecological receptors, the Projects will utilise predominantly earthmoving plant, as by its nature the primary activities along the onshore cable route are temporary haul road construction, excavation / backfilling and haul road removal works. In areas where trenchless techniques may be employed, similar earth-moving plant will be required, in addition to diesel power generation; these are standard items of plant used widely on construction sites.
22. As presented within **Chapter 6** (APP-054), the onshore cable route will be subdivided into sections of 500m to 2km lengths between the CCSs, and work will be undertaken in a practical, logical and sequential manner (e.g. topsoil stripping will be undertaken prior to construction of the haul road in advance of trench excavation). Section 1 and Section 2 of the onshore cable route will be in the vicinity of ecological receptors, in addition to the Landfall area of works (**Figure 6.6** (APP-101)). To provide a conservative assessment, it has been assumed that all plant and machinery will be operating along the length of each cable route section at any one time.
23. Impacts have been considered in relation to airborne nitrogen oxide (NO<sub>x</sub>) only, and its contribution to nutrient nitrogen and acid deposition. As all plant will be expected to use ultra-low sulphur diesel, the contribution to concentrations of SO<sub>2</sub> and its acidifying impacts was assumed to be negligible. This approach was agreed with the Councils.
24. As presented in **Section 2.1** of the **Deadline 3 Air Quality Clarification Note** (document reference ExA.AS-16.D3.V1), the number and types of plant that will be used at the landfall, along the onshore cable route and at the SPA crossing have been obtained from indicative information provided by the project engineers. The types of plant and the number of each item of plant used will vary throughout construction, depending on the specific activity undertaken. To provide a conservative assessment, the maximum number of each type of plant that could be used across the three-year construction programme has been included in the air quality model, and all NRMM is assumed to be in operation continuously for a full calendar year. This is likely to considerably overstate emissions as some

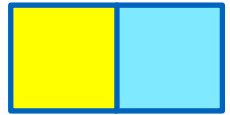


- construction activities are undertaken for a short duration (e.g. 1-2 months) only and the amount of plant used on site will therefore vary throughout any given year. Durations of horizontal directional drilling (HDD) works have been obtained from information provided by the project engineers.
25. There is a 24-hour Critical Level for NO<sub>x</sub>. Institute of Air Quality Management (IAQM) guidance (2020) recommends that this is only considered where specifically requested by the regulator, for example in Environmental Permit applications where high, short-term peaks may occur. Furthermore, the guidance states that the short-term NO<sub>x</sub> Critical Level of 75 µg.m<sup>-3</sup> has been derived for use where concentrations of ozone (O<sub>3</sub>) or sulphur dioxide (SO<sub>2</sub>) are at or above their Critical Levels, otherwise a 200 µg.m<sup>-3</sup> Critical Level should apply. Given that O<sub>3</sub> and SO<sub>2</sub> concentrations in the UK are generally low, the 200 µg.m<sup>-3</sup> threshold is appropriate. Therefore, this threshold has been adopted for the purposes of the assessment within the **Deadline 3 Air Quality Clarification Note** (document reference ExA.AS-16.D3.V1).
  26. Background values used in the assessment are detailed in **Table 2.7** of the **Deadline 3 Air Quality Clarification Note** (document reference ExA.AS-16.D3.V1).
  27. Other potential air borne pollution sources in the vicinity of the SPA are the generators used within the CCSs. The final locations of the CCS and trenchless technique compounds are yet to be determined. Therefore, sources at the landfall and the SPA crossing, and generators used for the onshore cable route works were situated in the most conservative locations with regard to ecological receptors (i.e. at the closest point) within each of the works areas. The indicative locations of the emission sources for each scenario are shown on **Figure 1 – 3 of the Deadline 3 Air Quality Clarification Note** (document reference ExA.AS-16.D3.V1).
  28. The assessment includes a number of NRMM control and management measures, as recommended in Department for the Environment Food and Rural Affairs guidance (2018), which are included within the **Outline Code of Construction Practice** (APP-578) secured by Requirement 22 of the **draft DCO** (an updated version has been submitted at Deadline 3, document reference 3.1). These measures will ensure that emissions from NRMM are minimised so far as is reasonably practicable.
  29. All scenarios showed that the landfall HDD works, which have been assumed to occur immediately adjacent to the Leiston-Aldeburgh SSSI, would give rise to elevated NO<sub>x</sub> concentrations and nitrogen and acid deposition. This is largely due to the assumed proximity of the emission sources to the receptors, as there would be limited dispersion of pollutants between source and receptor. As



construction works at the landfall will occur for up to 20 months, with operation of the HDD rigs assumed to occur over 8 months (24/7) of these 20 months, the longer-term impacts which would be experienced for the remaining years of construction of the Projects show a significant reduction in concentrations and deposition.

30. Of the three assessed scenarios for the SPA crossing, scenario C is predicted to give rise to the highest project-related impacts due to the proximity of the emission sources to the receptors and that 24-hour working will be employed. Scenario A, where the SPA will be crossed using an open trench technique, is the most favourable scenario.
31. The contribution of the Projects to Critical Levels and Loads are greater than 1% in a number of scenarios, and therefore impacts could not be considered to be insignificant.
32. The Leiston-Aldeburgh Site of Special Scientific Interest (SSSI) is afforded protection for acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. Only scrub habitat was recorded at the landfall during the Extended Phase 1 Habitat Survey undertaken to support the Applications. Given the assessment of all scenarios has been on worst-case assumptions, the predicted elevated NO<sub>x</sub> concentrations and nitrogen and acid deposition associated with operation of the HDD rigs are for up to an 8 month period and are predicted to considerably reduce after this period. They will therefore result in a short-term impact at worst and for only for a period of 8 months which from an ecological perspective is considered to be **not significant**.
33. The Sandlings SPA is afforded protection for breeding populations of nightjar and woodlark, acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. Scrub, semi-improved grassland and arable habitats were recorded within the SPA crossing area during the Extended Phase 1 Habitat Survey. Given the assessment of the three scenarios was on a worst-case assumption, the predicted elevated NO<sub>x</sub> concentrations and nitrogen and acid deposition are for up to a 5.5 month period (in each year of the construction period) and are predicted to considerably reduce after this period. They will therefore result in a short-term impact at worst and for only for a period of 5.5 months (in each year of the construction period) which from an ecological perspective is considered to be **not significant**.



## 4 References

Department for the Environment Food and Rural Affairs (2018) Local Air Quality Management Technical Guidance Document Local Air Quality Management.TG (16) London: Department for the Environment Food and Rural Affairs.

Institute of Air Quality Management (2020) A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites.