



SCOTTISHPOWER
RENEWABLES

East Anglia ONE North and East Anglia TWO Offshore Windfarms

Deadline 6 Onshore Ecology Clarification Note

Applicant: East Anglia TWO Limited and East Anglia ONE North Limited
Document Reference: ExA.AS-14.D6.V1
SPR Reference: EA1N_EA2-DWF-ENV-REP-IBR-001241_Rev01

Date: 24th February 2021
Revision: Version 01
Author: Royal HaskoningDHV

Applicable to **East Anglia ONE North** and **East Anglia TWO**



Revision Summary				
Rev	Date	Prepared by	Checked by	Approved by
001	24/02/2021	Paolo Pizzolla	Lesley Jamieson/ Ian MacKay	Rich Morris

Description of Revisions			
Rev	Page	Section	Description
001	n/a	n/a	Final for submission at Deadline 6



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Glossary of Acronyms

APIS	Air Pollution Information System
CCS	Construction Consolidation Site
DCO	Development Consent Order
DEFRA	Department for the Environment Food and Rural Affairs
EEA	European Environment Agency
EMEP	European Monitoring and Evaluation Programme
ES	Environmental Statement
ESC	East Suffolk Council
HDD	Horizontal Directional Drilling
IAQM	Institute of Air Quality Management
Kw	Kilowatt
NOx	Nitrogen Oxide
NRMM	Non-Road Mobile Machinery Emissions
O ₃	Ozone
SoCG	Statement of Common Ground
SO ₂	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.
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).

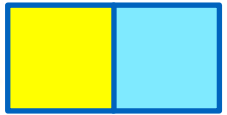


1 Introduction

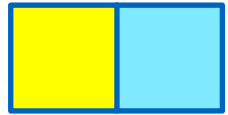
1. This clarification note has been prepared by East Anglia TWO Limited and East Anglia ONE North Limited (the Applicants) to clarify aspects of the East Anglia TWO project and the East Anglia ONE North project (the Projects) Development Consent Order (DCO) applications (the Applications).
2. This clarification note relates to onshore ecology matters and addresses queries raised by Natural England in Appendix C6 to its Deadline 4 submission (REP4-092).
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. Commenting on the assessment of Non-Road Mobile Machinery (NRMM) emissions presented within the **Deadline 3 Onshore Ecology Clarification Note** (REP3-060), Natural England's Deadline 4 submission (REP4-092) made a number of assessment requests regarding the likelihood of significant impacts on designated sites, including:
 - *“The full effect of the change in air quality on the designated site(s), considering information such as:*
 - *the sensitivity of the notified or interest features;*
 - *the current condition of habitat and/or is there evidence of the effects of NOx pollution on these habitats;*
 - *the most appropriate site relevant critical levels and critical loads as provided by the Air Pollution Information System (APIS) (www.apis.ac.uk); and*
 - *the location of the interest features and their proximity to the works.*
 - *Prevailing environmental conditions.*
 - *The predicted pollution in combination with other relevant plans and projects; and*
 - *Description of the modelling approach and the key assumptions and areas of uncertainty within it.”*



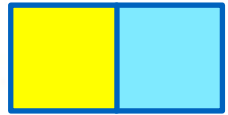
5. This clarification note provides information in response to the above points. It should be noted that some of the information requested is available in the ***Deadline 3 Air Quality Clarification Note*** (REP3-061) but has been repeated here for completeness.



2 NRMM Impacts on Ecological Receptors

2.1 Air Quality Assessment Scope and Scenarios

6. At the request of East Suffolk Council (ESC) through the Statement of Common Ground (SoCG) process, a quantitative assessment of the impacts of emissions from NRMM and generators used during construction of the Projects is presented in the **Deadline 3 Air Quality Clarification Note** (REP3-061).
7. As presented in **Section 2.1** of the **Deadline 3 Air Quality Clarification Note** (REP3-061), the assessment methodology used was agreed with ESC via e-mail (20th October 2020). The assessment considers the impact of emissions from the following activities:
 - Generators and NRMM used for trenchless technique works (e.g. horizontal directional drilling (HDD));
 - Generators and NRMM used for the onshore cable works;
 - NRMM and generators used within the Construction Consolidation Sites (CCSs); and
 - Vehicles travelling along the haul road.
8. The assessment is based on construction Scenario 1 (i.e. the Projects constructed simultaneously) as this is considered to represent the worst-case with regard to air quality. In addition, the following scenarios are considered regarding crossing the Sandlings Special Protection Area (SPA):
 - Scenario A – the Sandlings SPA is crossed using open trenching;
 - Scenario B – the Sandlings SPA is crossed using a trenchless technique (e.g. HDD) outside of the 200m buffer around the SPA crossing boundary and with no seasonal restriction; and
 - Scenario C – the Sandlings SPA is crossed using a trenchless technique (e.g. HDD) within the 200m buffer around the SPA crossing boundary, with a seasonal restriction between 14th February to 31st August applied to such works due to potential impacts on breeding birds.
9. It should be noted that the exact locations of emission sources will not be known until detailed design of the Projects. The assessment therefore makes conservative assumptions regarding the location of emission sources in relation to the proximity to ecological receptors.



10. Information relating the number and types of plant to be used at the landfall, along the onshore cable route and at the SPA trenchless technique crossing is indicative. Indicative plant types and engine sizes are based on those used for the East Anglia ONE project.
11. Plant types and the number of each plant item 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 a three-year construction programme has been included in the model, and all NRMM is assumed to be in operation continuously for a full calendar year. This is likely to significantly overstate emissions, as some construction activities will be undertaken for a short duration only (e.g. 1-2 months) and the amount of plant used on site would therefore vary throughout any given year.
12. As presented in **Section 2.1.2** of the **Deadline 3 Air Quality Clarification Note** (REP3-061), emissions from NRMM have been calculated using the methodology detailed in the European Monitoring and Evaluation Programme (EMEP) / European Environment Agency (EEA) guidebook Part B Section 1.A.4 Non Road Mobile Machinery (2019a). Pollutant emission factors are provided based on the size (in kilowatt (kW)) of the engine, which are provided as ranges, and the emissions standard (Stage I to V, with Stage V being the latest and most stringent emission standard). It is assumed that all plant falls into the category of 130-560kW, and that all items of plant have a maximum power rating of 560kW, with the exception of temporary lighting rigs and pumps which are stated by the project engineers to be <8kW each. This is likely to considerably overstate the power requirement of plant used on site as it is expected that most plant items will have engine sizes below 560kW (for example, indicative engine sizes of a Caterpillar D6 dozer, 20T excavator and 20T dumper are 161kW, 204kW and 252kW respectively).
13. There is no predicted in combination pollution because there are no other projects occurring where the Projects interact with the SPA and SSSI.

2.2 Location of Emission Sources

14. Emission sources are represented in the dispersion model as follows:
 - NRMM in the HDD compounds, transition bays, the onshore cable route and the CCSs are represented as line sources;
 - Generators are represented as point sources; and
 - The haul road is represented as a road source.



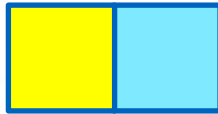
15. Line and road sources along the onshore cable route are included along the centre of the Projects' Order limits.
16. Due to the final locations of the CCS and HDD / trenchless technique compounds not yet being known, sources at the landfall and the SPA crossing, and generators used for the onshore cable route works have been situated in the most conservative location with regard to ecological receptors (e.g. at the closest point to the designated site(s)) within each of the works areas. The locations of the emission sources for each scenario are shown in **Figures 1 – 3, Appendix 1** of the **Deadline 3 Air Quality Clarification Note** (REP3-061).

2.3 Meteorological Data

17. As presented in **Section 2.1.4** of the **Deadline 3 Air Quality Clarification Note** (REP3-061), five years (2015-2019) of hourly sequential meteorological data from the Wattisham recording station have been used to predict effects across a range of dispersion conditions. Furthermore, potential impacts have been predicted for each of the five years of modelled data and the highest values subsequently reported.

2.4 Receptors and Critical Loads and Levels

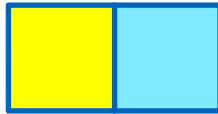
18. **Section 2.1.5** and **Table 2.6** of the **Deadline 3 Air Quality Clarification Note** (REP3-061) presents the receptors included within the air quality dispersion model and that are within the designated sites closest to the emission sources. The assessment comprises a qualitative review of information presented within **Chapter 6 Project Description** of the Environmental Statement (ES) (APP-054).
19. Receptors have been 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 and using information from the Air Pollution Information System (www.apis.ac.uk) relating to each of the site / habitat sensitivities (e.g. Critical Loads and Levels for ecosystem protection). **Table 2.6** of the **Deadline 3 Air Quality Clarification Note** (REP3-061) presents this information, but for completeness it duplicated in **Table 2.1**.



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Table 2.1 Receptor Locations, Habitats and Associated Nutrient Nitrogen and Acid Critical Loads

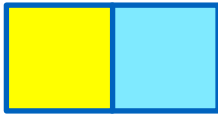
ID	Site	Location	X	Y	Habitat	Nutrient Nitrogen Critical Loads		Acid Critical Loads		
						Min CL	Max CL	Min CL Min N	Min CL Max N	Min CL Max S
E1	Leiston-Aldeburgh Site of Special Scientific Interest SSSI	Landfall	647222	260498	Acid grassland	8	15	0.223	0.703	0.48
E2	Leiston-Aldeburgh SSSI	Landfall	647256	260488	Acid grassland	8	15	0.223	0.703	0.48
E3	Leiston-Aldeburgh SSSI Sandlings SPA	Landfall	647057	260707	Broadleaved woodland	10	20	0.142	1.234	1.092
E4	Leiston-Aldeburgh SSSI	Landfall	647475	260583	Broadleaved woodland	10	20	0.142	1.234	1.092
E5	Leiston-Aldeburgh SSSI	Landfall	647477	260614	Broadleaved woodland	10	20	0.142	1.234	1.092
E6	Leiston-Aldeburgh SSSI	Landfall	647496	260601	Broadleaved woodland	10	20	0.142	1.234	1.092
E7	Leiston-Aldeburgh SSSI	Landfall	647527	260602	Broadleaved woodland	10	20	0.142	1.234	1.092
E8	Leiston-Aldeburgh SSSI	Landfall	647664	260722	Supralittoral sediment	-	-	-	-	-
E9	Leiston-Aldeburgh SSSI Sandlings SPA	Cable route	647209	261453	Broadleaved woodland	10	20	0.142	1.234	1.092
E10	Leiston-Aldeburgh SSSI	Cable route	647634	261385	Supralittoral sediment	-	-	-	-	-
E11	Leiston-Aldeburgh SSSI	Cable route	645522	260668	Broadleaved woodland	10	20	0.142	1.234	1.092



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ID	Site	Location	X	Y	Habitat	Nutrient Nitrogen Critical Loads		Acid Critical Loads		
						Min CL	Max CL	Min CL Min N	Min CL Max N	Min CL Max S
	Sandlings SPA									
E12	Leiston-Aldeburgh SSSI Sandlings SPA	Crossing	646319	262136	Dwarf shrub heath	10	20	0.714	1.372	0.48
E13	Leiston-Aldeburgh SSSI Sandlings SPA	Crossing	646592	262261	Dwarf shrub heath	10	20	0.714	1.372	0.48
E14	Leiston-Aldeburgh SSSI Sandlings SPA	Crossing	646621	261931	Dwarf shrub heath	10	20	0.714	1.372	0.48
E15	Leiston-Aldeburgh SSSI Sandlings SPA	Crossing	646620	261891	Dwarf shrub heath	10	20	0.714	1.372	0.48
E16	Leiston-Aldeburgh SSSI Sandlings SPA	Crossing	646600	262061	Dwarf shrub heath	10	20	0.714	1.372	0.48
E17	Leiston-Aldeburgh SSSI/ Sandlings SPA	Crossing	646647	262084	Dwarf shrub heath	10	20	0.714	1.372	0.48
E18	Leiston-Aldeburgh SSSI/ Sandlings SPA	Crossing	646694	262109	Dwarf shrub heath	10	20	0.714	1.372	0.48



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ID	Site	Location	X	Y	Habitat	Nutrient Nitrogen Critical Loads		Acid Critical Loads		
						Min CL	Max CL	Min CL Min N	Min CL Max N	Min CL Max S
E19	Leiston-Aldeburgh SSSI/ Sandlings SPA	Crossing	646610	262024	Dwarf shrub heath	10	20	0.714	1.372	0.48
E20	Leiston-Aldeburgh SSSI/ Sandlings SPA	Crossing	646664	262051	Dwarf shrub heath	10	20	0.714	1.372	0.48
E21	Leiston-Aldeburgh SSSI/ Sandlings SPA	Crossing	646714	262075	Dwarf shrub heath	10	20	0.714	1.372	0.48



2.4.1 Background Concentrations

20. Background concentrations of nitrogen oxide (NO_x) were obtained from the Department for the Environment Food and Rural Affairs (DEFRA) background mapping (2020). Background nutrient nitrogen and acid deposition values were obtained from APIS (2020). The background values used in the air quality assessment are presented in **Table 2.7** of the **Deadline 3 Air Quality Clarification Note** (REP3-061), but for completeness are provided in **Table 2.2**.

Table 2.2 Background Values used in the Assessment

Receptor ID	Annual Mean NO _x Background (µg.m ⁻³)	Short Term NO _x Background (µg.m ⁻³)	Background Nutrient Nitrogen Deposition (kgN/ha/yr)	Background Acid Deposition (N) (keq/ha/yr)	Background Acid Deposition (S) (keq/ha/yr)
E1	7.23	14.64	11.5	0.8	0.1
E2	7.23	14.64	11.5	0.8	0.1
E3	7.23	14.65	19.9	1.4	0.2
E4	7.23	14.65	19.9	1.4	0.2
E5	7.23	14.66	19.9	1.4	0.2
E6	7.23	14.64	19.9	1.4	0.2
E7	7.23	14.63	19.9	1.4	0.2
E8	7.23	14.62	11.5	0.8	0.1
E9	7.27	15.02	19.9	1.4	0.2
E10	7.27	14.79	11.5	0.8	0.1
E11	7.43	15.10	21	1.4	0.2
E12	7.60	15.74	14.9	1.1	0.1
E13	7.60	15.91	14.9	1.1	0.1
E14	7.35	15.07	14.9	1.1	0.1
E15	7.35	15.04	14.9	1.1	0.1
E16	7.60	15.79	14.9	1.1	0.1
E17	7.60	15.85	14.9	1.1	0.1
E18	7.60	15.96	14.9	1.1	0.1
E19	7.60	15.79	14.9	1.1	0.1



Receptor ID	Annual Mean NOx Background ($\mu\text{g.m}^{-3}$)	Short Term NOx Background ($\mu\text{g.m}^{-3}$)	Background Nutrient Nitrogen Deposition (kgN/ha/yr)	Background Acid Deposition (N) (keq/ha/yr)	Background Acid Deposition (S) (keq/ha/yr)
E20	7.60	15.84	14.9	1.1	0.1
E21	7.60	15.92	14.9	1.1	0.1

2.5 Results

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)). As noted in **Section 2.2**, 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 NOx 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 sulphur dioxide (SO₂) and its acidifying impacts was assumed to be negligible. This approach was agreed with ESC.
24. There is a 24-hour Critical Level for NOx. 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 NOx Critical Level of 75 $\mu\text{g.m}^{-3}$ has been derived for use where concentrations of ozone (O₃) or SO₂ are at or above their Critical Levels, otherwise a 200 $\mu\text{g.m}^{-3}$ Critical Level should apply. Given that O₃ and SO₂ concentrations in the UK are generally low, the 200 $\mu\text{g.m}^{-3}$ threshold is appropriate. Therefore, this threshold has been adopted for the purposes of the assessment within the **Deadline 3 Air Quality Clarification Note** (REP3-061).

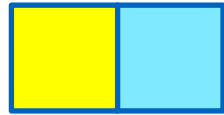


25. All scenarios show that the landfall HDD works, which have been assumed to occur immediately adjacent to the Leiston-Aldeburgh SSSI, would give rise to elevated NO_x concentrations and nitrogen and acid deposition. This is largely due to the assumed proximity of the emission sources to the receptors, 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 (two) 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.
26. 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.
27. 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.

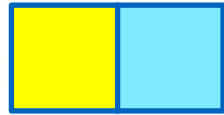
2.6 Ecological Appraisal

2.6.1 Sandlings SPA

28. The Sandlings SPA is primarily afforded protection for breeding populations of nightjar and woodlark. The associated supporting habitats within the SPA include acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle.
29. Areas of scrub, semi-improved grassland and arable habitats were recorded within at the SPA crossing location during the 2018 Extended Phase 1 Habitat Survey. As shown on **Figure 1** to **Figure 3, Appendix 1** of the **Deadline 3 Air Quality Clarification Note** (REP3-061), the receptor locations within the Sandlings SPA (i.e. E12 – E21) are either where the designation is at its narrowest or along the fringes of the associated habitats.
30. The Applicants have since revisited the proposed SPA crossing location (15th – 16th February 2021) and recorded the habitat as comprising open areas of tussocky grassland with minimal mosses present. Patches of reed canary grass was also present alongside orchard grass, silver hair grass and scattered blackthorn, gorse, bramble, fern and cleavers. A condition survey of the habitats was undertaken and concluded they are of moderate to poor condition. This is evidenced through the following observations:
 - Less than 50% dwarf shrub cover;
 - No distinct range of age of gorse; and



- Less than 33% gorse present;
31. Regarding signs of acid and/or nitrogen deposition, due to the lack of species diversity and structural diversity in and around the ecology receptor locations, in combination with the presence of reed canary grass, it is considered that this is attributable to nitrogen run-off from the adjacent arable fields and not from atmospheric nitrogen sources. A comparison was made of the habitats and species within the ecological receptor locations to that of the wider SPA, which concluded that the habitats and species noted within the ecological receptor locations are not considered representative (or of ecological value) to the function and integrity of the SPA. This conclusion is supported through the moderate to poor habitat condition assigned to this location.
32. The predicted Critical Loads and Levels for the habitats associated with the SPA that have been used in the air quality assessment are as those presented in **Table 2.6** of the **Deadline 3 Air Quality Clarification Note** (REP3-061).
33. As presented in **Section 2.2** and shown on **Graph 2.1** to **Graph 2.5** in the **Deadline 3 Air Quality Clarification Note** (REP3-061), the Projects are predicted to give rise to contributions greater than 1% of the NO_x Critical Load at all receptors in all scenarios. Therefore, impacts on the habitats associated with the SPA could not be considered to be insignificant. However, the annual mean NO_x Critical Level is not predicted to be exceeded at any receptor, with the exception of receptor E5 which is located immediately south of the proposed landfall HDD compound and is outside the SPA.
34. Regarding nutrient nitrogen deposition, as shown on **Graph 2.6** and **Graph 2.7** in the **Deadline 3 Air Quality Clarification Note** (REP3-061), contributions from the Projects are predicted to be greater than 1% of the lowest Critical Loads in all scenarios. Background deposition is in exceedance of the lowest Critical Loads at all receptor locations. It has been assumed that the landfall HDD works will occur for up to 20 months, with operation of the HDD rigs occurring over 8 (24/7) of these 20 months. Following this the emission sources from these works would no longer be in operation. Impacts are therefore considered to be temporary.
35. The greatest acid deposition generated by the Projects is identified to occur at those receptors closest to the landfall, which are located outside the Sandlings SPA boundaries. As shown on **Graph 2.9** in the **Deadline 3 Air Quality Clarification Note** (REP3-061), the predicted acid deposition generated by the Projects reduces without the temporary landfall HDD works, with some receptors being predicted to experience impacts below 1% of the Critical Load. Therefore,

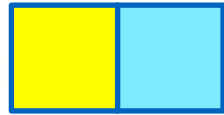


the impacts at some these receptor locations (i.e. at the landfall) would be temporary and would not be considered significant.

36. Given the assessment of the three scenarios is based on worst-case assumptions, the elevated NO_x concentrations and nitrogen and acid deposition are predicted for up to a 5.5-month period (in each year of the construction period) and are equally predicted to considerably reduce on completion of these works. 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).
37. The impacts associated with increased acid deposition and nutrient nitrogen deposition within the air or the deposition of nitrogen on to the vegetation can result in the degradation of habitats through eutrophication or direct toxicity. Increases could result in harmful effects and habitat changes and will potentially occur throughout construction. A number of NRMM control and management measures, as recommended in DEFRA guidance (2018), are presented in the **Outline Code of Construction Practice** (REP3-022) secured by Requirement 22 of the DCO. These measures will ensure that emissions from NRMM are minimised so far as is reasonably practicable.
38. Considering the current moderate to poor habitat condition and species diversity at the ecological receptor locations, the implementation of NRMM control and management measures will only result in a temporary and/or localised change to these habitats, which will not prevent their long term recovery. However, it should be noted that the habitats and species recorded within the ecological receptor locations are not considered representative when compared to the wider SPA (or of ecological value for the SPA qualifying features (i.e. nightjar and woodlark)). In turn, these habitats are not considered to contribute towards the overall function and integrity of the SPA and/or its qualifying features.

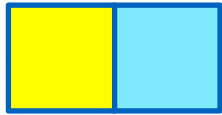
2.6.2 Leiston-Aldeburgh SSSI

39. The Leiston-Aldeburgh SSSI is afforded protection for acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle.
40. Of the Leiston-Aldeburgh SSSI designated habitats, only scrub habitat was recorded at the landfall during the 2018 Extended Phase 1 Habitat Survey. As shown on **Figures 1 to Figure 3, Appendix 1** of the **Deadline 3 Air Quality Clarification Note** (REP3-061), the receptor locations within the Leiston-Aldeburgh SSSI are along the boundary of the designation and along the fringes of the scrub habitat associated with it.
41. The Applicants have since revisited the landfall (15th – 16th February 2021) and recorded the habitat as being plantation woodland with species of semi-mature silver birch and scattered oak and pines. Ground cover species recorded include



bramble, nettle, perennial rye grass, Yorkshire fog, fern moss, red stemmed feather moss and occasional skunk cabbage, cleavers and ground ivy. The adjacent habitat was noted as being arable and in agricultural production. A habitat condition survey of the habitats within the proposed SSSI crossing was undertaken and concluded they are of poor condition. This conclusion is evidenced through the following observations:

- Plantation woodland with planting lines visible (tree guards noted during the survey);
 - Tree species dominated by one species (silver birch) of a similar age (all semi-mature);
 - Skunk cabbage is noted as an 'undesirable species'; and
 - No evidence of past management (i.e. coppicing).
42. Regarding signs of acid and/or nitrogen deposition, due to the lack of species diversity and structural diversity in and around the ecology receptor locations, in combination with the presence of reed canary grass, it is considered that this is attributable to nitrogen run-off from the adjacent arable fields and not from atmospheric nitrogen sources. A comparison was made of the habitats and species within the ecological receptor locations to that of the wider SSSI, which concluded that those within the ecological receptor locations are not considered representative (or of ecological value) to the function and integrity of the SSSI. This conclusion is supported through the poor habitat condition assigned to this location.
43. The predicted Critical Loads and Levels for the habitats associated with the SSSI that have been used in the air quality assessment are as those presented in **Table 2.6** of the **Deadline 3 Air Quality Clarification Note** (REP3-061).
44. All scenarios show that the landfall HDD works, which have been assumed to occur immediately adjacent to the Leiston-Aldeburgh SSSI, would give rise to elevated NO_x concentrations and nitrogen and acid deposition. This is largely due to the assumed proximity of the emission sources to the receptor locations closest to habitats associated with the Leiston-Aldeburgh SSSI. As it has been assumed that the landfall HDD impacts will occur for up to 20 months, with operation of the HDD rigs occurring over 8 (24/7) of these 20 months, the longer-term impacts would significantly reduce in both concentrations and deposition.
45. As noted in **section 6.2.1**, measures within the **Outline Code of Construction Practice** (REP3-022) will ensure that emissions from NRMM are minimised so far as is reasonably practicable. Considering the current moderate to poor habitat condition and species diversity at the ecological receptor locations, the



implementation of NRMM control and management measures will result in only a temporary and/or localised change to these habitats, which will not prevent their long term recovery. However, it should be noted that the habitats and species recorded within the ecological receptor locations are not considered representative when compared to the wider SSSI (or of ecological value for the SSSI qualifying features). In turn, these habitats are not considered to contribute towards the overall function and integrity of the SSSI and/or its qualifying features.

3 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.