East Anglia ONE North and East Anglia TWO Offshore Windfarms

Clarification Note

Ecological Enhancement

Applicants: East Anglia ONE North Limited and East Anglia TWO Limited
Document Reference: ExA.AS-16.D1.V1
SPR Reference: EA1N_EA2-DWF-ENV-REP-IBR-001115

Date: 2nd November 2020
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**
01	02/11/2020	Paolo Pizzolla	Lesley Jamieson / Ian Mackay	Rich Morris

Description of Revisions			
Rev	**Page**	**Section**	**Description**
01	n/a	n/a	Final for Deadline 1

Table of Contents

Glossary of Acronyms

DCO	Development Consent Order
ES	Environmental Statement
ESC	East Suffolk Council
NE	Natural England
NSIP	Nationally Signifcant Infrastructure Project
OLEMS	Outline Landscape and Ecological Management Strategy
PRoW	Public Right of Way
SCC	Suffolk County Council
SoCG	Statement of Common Ground
SuDS	Sustainable Drainage Systems

Glossary of Terminology

Applicants	East Anglia TWO Limited / East Anglia ONE North Limited
The Councils	Suffolk County Council and East Suffolk Council
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.
Mitigation areas	Areas captured within the onshore development area specifically for mitigating expected or anticipated impacts.
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 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 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.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO / East Anglia ONE North projects from landfall to the connection to the national electricity grid.
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 and East Anglia ONE North Development Consent Order (DCO) applications (the Applications).

2. This note sets out the Applicants' position on Biodiversity Net Gain (as referred to in the UK Government's draft Environment Bill 2020) in relation to the East Anglia TWO and East Anglia ONE North projects (the Projects). Furthermore, it outlines the opportunities for ecological enhancement to be provided by the Projects by way of various measures proposed within the Environmental Statement (ES) and the ***Outline Landscape and Ecological Management Strategy*** (OLEMS) (APP-584). The information included within this note aims to address queries raised by East Suffolk Council (ESC) and Suffolk County Council (SCC) (the Councils) and Natural England (NE) 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 of this Clarification Note

4. Through the SoCG process, NE and the Councils have sought clarification on the assessment presented within ***Chapter 22 Onshore Ecology*** (APP-070) of the ES. In particular, confirmation regarding the Applicants' position on Biodiversity Net Gain and the Projects' potential to deliver ecological enhancement has been requested.

1.1.1 The Applicants' Position on Biodiversity Net Gain

5. Through the UK Government's draft Environment Bill 2020, Biodiversity Net Gain has been introduced as a mandatory requirement for certain new developments. However, the UK Government's response to the Department for Environment, Food and Rural Affairs' (DEFRA) 2019 consultation on Net Gain clarified that nationally significant infrastructure projects (NSIPs) (such as the Projects) are not required to deliver Net Gain, stating it *"will continue to work on exploring potential net gain approaches for these types of development, but nationally significant*

infrastructure and net gain for marine development will remain out of scope of the mandatory requirement in the Environment Bill" (DEFRA, 2019).

6. The Applicants have carefully evaluated the potential impacts of the Projects on onshore ecology and ornithology throughout the iterative design process. The response to those findings has ensured that if impacts cannot be avoided then appropriate mitigation or compensation has been proposed in line with The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) and the policy requirements set out in the relevant National Policy Statements, in particular the key sections of the National Policy Statement for Energy (EN-1). The Applicants have sought the necessary land and rights to deliver these commitments.

7. Biodiversity Net Gain is a different concept however; it is not a policy requirement for NSIPs and nor are NSIPs covered by the draft legislation contained in the Environment Bill 2000. The Projects have not been developed to meet a 'biodiversity gain' test and this would not be an appropriate foundation on which to acquire land or rights on a compulsory basis within the Applications.

1.1.2 The Projects' Potential to Deliver Ecological Enhancement

8. As noted in ***section 1.1.1***, under the requirements of the EIA Regulations the Applicants have identified appropriate mitigation or compensation measures for the Projects' potential impacts where they cannot be avoided. However, for some elements of the Projects the Applicants have also sought to augment these measures with proposals aimed at enhancing the ecological baseline and which should result in long-term benefits. The information presented within this clarification note demonstrates that no net loss of biodiversity will result from the Projects, and for some of their elements the Projects will provide notable opportunities for ecological enhancement.

2 Proposed Methodology

9. In order to demonstrate the opportunities for ecological enhancement to be provided by the Projects, it is necessary to understand and quantify the baseline biodiversity conditions. A retrospective calculation of baseline biodiversity has been undertaken using the DEFRA Biodiversity Metric 2.0 (Natural England, 2019). This has used habitat data from the ***Extended Phase 1 Habitat Survey*** (APP-503 and APP-504) presented in the ES, including area, linear and river habitats, to establish the biodiversity 'value' of the land within the onshore development area.

10. It should be noted that the final onshore cable routes and precise footprints of other elements of the Projects within the onshore development area will not be determined until the detailed design stage. The calculations are therefore based on the full onshore development area[1]. In reality habitat loss is therefore likely to be less than the calculations suggest as the detailed design process will result in a footprint for the Projects that does not occupy the whole onshore development area.

11. Habitat baseline calculations are undertaken in two stages. Firstly, the ecological baseline (total habitat units) are calculated by inputting the following data into the Metric:

- Habitat type;
- Area (ha) / length (km);
- Condition;
- Ecological connectivity; and
- Strategic significance (within local strategy).

12. This data produces a total site baseline, which is quantified as 'habitat units'[2].

13. The final part of the baseline calculations is the 'retention category biodiversity value', where habitat area / length that is to be retained, enhanced or left / managed to achieve accelerated succession is quantified. The final output of the

[1] The calculations are based on the amendment order limits as updated at Deadline 1.

[2] The Biodiversity Metric 2.0 uses habitat as a proxy to describe biodiversity. These habitats are converted into measurable 'biodiversity units'. These biodiversity units are the 'currency' of the metric. Biodiversity units are calculated using the size of a parcel of habitat and its quality. The metric uses habitat area as its core measurement, except for linear habitats where habitat length is used.

baseline calculations is the total area / length lost and the total biodiversity units lost.

14. The vast majority of habitat loss within the onshore development area will be temporary as like-for-like replanting will be undertaken post-construction where possible. A temporal multiplier will be applied with regard to biodiversity as the replanted habitats will take varying amounts of time to reach their respective target conditions (i.e. no net loss will not be achieved immediately as a consequence).

15. For those habitats that will be improved or created as part of the Projects (i.e. trees / hedgerows / marginal planting of Sustainable Drainage Systems (SuDS) at the onshore substations), ecological enhancement will be fully calculated once all plans are finalised.

16. Given their different characteristics and the nature of their potential impacts, calculations have been undertaken separately for the onshore cable corridor and the onshore substations and National Grid infrastructure locations.

17. Ecological enhancements such as designing SuDS for biodiversity, 'gapping up' hedgerows and tree planting at the onshore substations and National Grid infrastructure locations have been included within the Biodiversity Metric calculations to demonstrate that there will be no net loss of biodiversity and that there will be ecological enhancement as a result of the Projects.

18. Where habitat is to be temporarily lost as a result of onshore cable route construction, a temporal factor has been applied to the area and linear habitats lost, however these will be replaced 'like-for-like' where possible and therefore the aim of the Biodiversity Metric calculation is to demonstrate an overall neutral impact or no net loss of biodiversity.

3 Biodiversity Baseline

3.1 Biodiversity Calculations

19. Using data on existing habitats, including habitat areas and condition from the ***Extended Phase 1 Habitat Survey*** (APP-503 and APP-504), biodiversity calculations for the various habitat types (as illustrated in ***Figure 22.3*** (APP-276)) were completed, as detailed below.

20. The habitats identified, within the onshore development area include:

- Hedgerows;
- Woodland and Forest – lowland mixed deciduous woodland;
- Woodland and Forest – Other woodland; broadleaved;
- Woodland and Forest – Other woodland; mixed;
- Heathland and shrub – Mixed scrub;
- Grassland – Modified grassland; and
- Cropland – Cereal crops.

21. Where condition information on the habitats within the onshore development area is not currently available, professional judgement has been used to inform the habitat condition score.

22. The strategic significance (as defined within the Biodiversity Metric 2.0 (NE, 2019)) of habitats has been informed using the Suffolk Coastal Final Draft Local Plan (ESC, 2019) and the Suffolk Local Biodiversity Action Plan (Suffolk Biodiversity Partnership, 2012). Within the Biodiversity Metric, no weighting is given to designations that overlap the onshore development area. Neither is weighting given to the qualification of certain habitat types as 'Priority' or 'Local Biodiversity Action Plan' habitats, or to the suitability of habitats to support protected or notable species. When further developing the biodiversity calculations, specific requirements of key terrestrial species such as reptiles, bats and invertebrates, can be considered through the selection of appropriate habitat types which are known to support these species.

23. The majority of habitats were deemed to be in moderate condition with low to medium ecological connectivity due to the lack, in some areas, of wider habitat connectivity through woodland, open grassland and hedgerows. This presents an opportunity to achieve enhancement of biodiversity through the improvement of habitat condition and providing ecological connectivity between habitats that are currently isolated or require improvements such as gapping up of hedgerows and tree planting.

24. ***Appendix 1*** details the results of the baseline unit calculations for each of the habitats (including hedgerows) recorded along the onshore cable corridor and at the onshore substations and National Grid infrastructure locations using the methodology described in ***Section 2***.

3.1.1 Habitats

25. As presented in ***Tables A1*** and ***A2*** in ***Appendix 1***, the total site habitat units calculated within the onshore development area are 700 and comprise 6 broad habitat types. The total habitat units with the potential to be lost as a result of the Projects are estimated to be 310 (of which 229 are cropland with low ecological value). It should be noted that the total habitat units with the potential to be lost are based on worst case assumptions. Construction at the onshore substations and National Grid infrastructure locations may not result in permanent loss of all habitats but this has been assumed in order to calculate the worst case. Additionally, as shown in ***Table A2,*** 95% of the proposed location for the onshore substations and National Grid infrastructure comprises agricultural cropland which is not assigned a habitat condition due to its low ecological value. Habitat types that will incur loss within the onshore development area are:

- Woodland and Forest - lowland mixed deciduous woodland (73 habitat units);
- Grassland - modified grassland (6 habitat units);
- Heathland and shrub - mixed scrub (2 habitat units); and
- Cropland - cereal crops (229 habitat units).

3.1.2 Hedgerows

26. As presented in ***Tables A3*** and ***A4*** in ***Appendix 1***, the total hedgerow units calculated within the onshore development area is 40 and this comprises 4 broad hedgerow types. The total hedgerow units[3] with the potential to be lost as a result of the Projects is estimated to be 15.

[3] Biodiversity metric 2.0 includes additional supplementary modules for habitats that are not well described by their area. These are linear habitats, for which habitat length is often a more meaningful measure of their extent than area. The hedgerow units are calculated differently to habitat units and have their own discrete biodiversity unit types.

4 Ecological Enhancement and Habitat Creation

27. This section provides details on the opportunities for habitat creation and enhancement within the onshore development area that the Applicants intend to deliver through the Projects.

4.1 Onshore Substations and National Grid Infrastructure Locations

28. Habitat creation and enhancement will be undertaken around the onshore substations and National Grid infrastructure locations. This will include enhancing hedgerows with native 'woody' species, creating SuDS ponds which will include marginal, wet grassland planting and planting native trees, species rich and amenity grassland surrounding the substation infrastructure.

29. Calculations have been undertaken to establish the impact on biodiversity units as a result of habitat enhancement and creation associated with the Projects as demonstrated in ***Tables 1***, ***2*** and ***3*** below. It should be noted that a number of reasonable assumptions have been made in undertaking these calculations. The calculations have been informed by the ***Outline Landscape Management Plan General Arrangement*** drawing (***Figure 29.11*** (APP-401)); areas and linear features have been calculated based on this outline plan.

30. There is potential for the Projects to deliver an additional 71 habitat units through habitat creation, which would comprise the following habitats:

- Woodland and forest – Other woodland; broadleaved and Other woodland; mixed; and
- Grassland – species rich grassland, wet grassland and Amenity Grass.

31. Calculations are based upon habitat areas retained and enhanced through on-site proposals identified as being required within the ES. As design certainty develops post-consent, it may be possible to improve this initial score through refining the mitigation measures adopted as influenced by the detailed design of the Projects and pre-construction ecological surveys.

32. When planting new woodland and grassland, a temporal multiplier is added which calculates the time taken to reach target condition[4]. For woodland, this is 32 years or more, and therefore the overall score is impacted due to the ecological effect of removing established woodland and replanting whips. Semi mature and mature trees support wildlife such as bats, invertebrates and birds as well as lichen and fungi. Whips have a propensity to fail if not properly managed and will also take time to become established enough to support a variety of species. Therefore, although there will be some initial benefits for biodiversity, these will be relatively minor.

33. A management and monitoring plan will be required to ensure that the trees, grassland and hedgerows planted or enhanced at the onshore substations and National Grid infrastructure locations reach their target condition.

34. There is also the potential for the Projects to deliver an additional 512 hedgerow units and to enhance 8 hedgerow units at the at the onshore substations and National Grid infrastructure locations.

Table 1 Habitat Creation at the Onshore Substations and National Grid Infrastructure Locations

Proposed Habitat	Condition	Area (ha)	Ecological Connectivity	Habitat Units Delivered
Grassland – Modified grassland	Fairly Good	0.05	Low	0.18
Grassland – Other neutral grassland	Good	1.7	Low	13.15
Grassland – Modified grassland	Fairly Good	0.02	Low	0.07
Woodland and forest - Other woodland; mixed	Fairly Good	0.03	Low	0.08
Grassland – Modified grassland	Fairly Good	1.89	Low	6.78

[4] The time period to use in applying the Time to Target Condition multiplier to a metric calculation is the length of time (in years) between the intervention and the point in time the habitat reaches the pre-agreed target quality (i.e. distinctiveness, condition, area). This time will vary between habitat types, between change scenarios (e.g. creation typically takes longer than enhancement) and due to the way the habitat is managed. Time to target condition values – based on good practice and typical conditions are provided for all habitats used in Biodiversity Metric 2.0.

Proposed Habitat	Condition	Area (ha)	Ecological Connectivity	Habitat Units Delivered
Woodland and forest - Other woodland; broadleaved	Fairly Good	5.78	Low	13.62
Woodland and forest - Other woodland; mixed	Fairly Good	0.65	Low	1.65
Woodland and forest - Other woodland; mixed	Fairly Good	1.24	Low	3.14
Woodland and forest – Wet woodland	Good	0.23	Moderate	1.07
Woodland and forest - Other woodland; broadleaved	Fairly Good	1.33	Low	3.13
Woodland and forest - Other woodland; mixed	Fairly Good	0.19	Low	0.48
Grassland – Modified grassland	Good	7.25	Low	28.04
Total	**-**	**20.36**	**-**	**71.39**

Table 2 Hedgerow Enhancement at the Onshore Substations and National Grid Infrastructure Locations

Baseline Habitat	Proposed Habitat	Hedgerow units delivered
Native Hedgerow with trees	Native Species Rich Hedgerow with trees	0.75
Native Hedgerow	Native Species Rich Hedgerow	0.90
Native Hedgerow with trees	Native Species Rich Hedgerow with trees	0.55
Native Hedgerow	Native Species Rich Hedgerow	1.55

Baseline Habitat	Proposed Habitat	Hedgerow units delivered
Native Hedgerow	Native Species Rich Hedgerow	0.49
Native Hedgerow	Native Species Rich Hedgerow	0.57
Native Species Rich Hedgerow with trees	Native Species Rich Hedgerow with trees	1.82
02Native Hedgerow	Native Species Rich Hedgerow	0.43
Native Hedgerow with trees	Native Species Rich Hedgerow with trees	0.51
Total	**-**	**7.57**

Table 3 Hedgerow Creation at the Onshore Substations and National Grid Substation Locations

Habitat Type	Condition	Length (km)	Ecological Connectivity	Hedge units delivered
Native Species Rich Hedgerow	Good	0.26	Low	1.61
Native Species Rich Hedgerow	Good	0.32	Low	1.98
Native Species Rich Hedgerow	Good	0.054	Low	0.33
Native Species Rich Hedgerow	Good	0.003	Low	0.02
Native Species Rich Hedgerow	Good	0.003	Low	0.02
Native Species Rich Hedgerow	Good	0.031	Low	0.19
Native Species Rich Hedgerow	Good	61.1	Low	378.41
Native Species Rich Hedgerow	Good	20.17	Low	124.92
Native Species Rich Hedgerow	Good	0.35	Low	2.17

Habitat Type	Condition	Length (km)	Ecological Connectivity	Hedge units delivered
Native Species Rich Hedgerow	Good	0.05	Low	0.31
Native Species Rich Hedgerow	Good	0.16	Low	0.99
Native Species Rich Hedgerow	Good	0.09	Low	0.56
Total	**-**	**85.59**	**-**	**511.51**

4.2 Onshore Cable Corridor

35. The majority of habitats affected by the onshore cable route will be temporarily lost as a result of construction, however they will be replaced 'like-for-like' where possible to ensure habitat connectivity is not permanently affected. An equivalent area of woodland that will be permanently lost will be planted within Work No. 24. Hedgerows that will be temporarily lost will be reinstated in-situ. Where landowner agreement is obtained, improvements (i.e. diverse hedgerow species specifications which are in-keeping with the character of the local area) will also be made to hedgerows immediately adjacent to the removed sections where these are located within the onshore development area. The time taken to reach target condition of hedgerows, woodland and grassland will be accounted for when calculating the effects on biodiversity. While at least an equivalent area of lost habitat will be replaced, the temporal impact has been accounted for within the Biodiversity Metric, which will demonstrate a temporary loss of biodiversity units with an aim of no overall loss.

36. Improvements to hedgerows and any additional planting or enhancements made, such as 'gapping up' hedgerows, enhancing grassland species mixes and creating wooded areas of better habitat condition, than that which will be lost, will contribute towards potential biodiversity enhancement. This will be established as planting schedules are refined during the detailed design stage.

37. Following the construction phase, habitats will be fully reinstated as far as is practicable.

4.3 Opportunities for Ecological Enhancement

38. Planting and landscaping has been proposed which seeks to, among other objectives, benefit ecological species within the onshore development area. The details of the planting and landscaping proposed are given within the ***OLEMS*** (APP-584) submitted with the DCO application and also presented within ***Table***

4. A final Landscape Management Plan will be produced post-consent for approval by the relevant planning authority as a requirement of the DCO.

39. These management plans respond to these objectives through their inclusion of substantial areas of new woodland, species rich grassland and hedgerows, the arrangement of these areas to connect internally (within the onshore development area) and connect externally (outside the onshore development area) with existing woodlands, grasslands and hedgerows in the surrounding landscape, and the contribution they would make through their design to the enhancement of the local landscape character. Proposals for planting and landscaping to benefit biodiversity include:

- Proposals for new woodland and native hedgerow planting at the onshore substations and National Grid infrastructure locations and along the onshore cable route;
- Proposals for reinstatement of land at the onshore substation and National Grid infrastructure locations and along the onshore cable route;
- Proposals for reinstatement and planting of historic hedgerow field boundaries at the onshore substations and National Grid infrastructure locations;
- Proposals for a surface water management SuDS basin to manage surface water run-off from the onshore substations and National Grid substation locations;
- Proposals for a potential additional SuDS basin (or similar) to assist in the management of surface water inflows to the substation locations, which will in turn reduce flood risk in the village of Friston; and
- Proposals for biodiversity mitigation within the onshore development area.

40. The planting of hedgerows will provide wildlife corridors, most notably commuting and foraging habitat for bats which are a European Protected Species. Planting of woodland blocks will provide habitat for local wildlife, including protected species such as badgers. These areas of woodland may also provide roosts for bat species as individual trees mature. Enhancing the habitat connectivity of the local landscape has the potential to improve biodiversity and, in turn, provide critical habitat for pollinators, birds and bats in particular. The wetland habitat provided around the establishment of the SuDS ponds will be beneficial to local wildlife species. This marginal planting will also create a more diverse, mosaic habitat, providing cover for reptiles and amphibians as well as a range of invertebrates. Verge and hedgerow habitat would provide wildlife corridors between existing ponds and the proposed SuDS ponds. Verge habitat will additionally provide refuge for local reptile species.

41. Additional details of the planting and landscaping proposed are presented within ***Table 4*** below.

Table 4 Opportunities for Ecological Enhancement within the Onshore Development Area as Identified in the OLEMS

Proposal for Ecological Enhancement	Section of OLEMS	Description of Ecological Enhancement Measures	Ecological Enhancement Achieved
Onshore Substations and National Grid Infrastructure Locations			
Planting near the onshore substations and National Grid infrastructure locations	***Section 3.5.2***	Woodland blocks to the south of the onshore substations and National Grid substation locations are intended to provide screening from visual receptors on the northern edges of Friston. Woodland block planting to the north-east is intended to provide screening from road-users of Grove Road and from Knodishall. Small woodland block planting to the north of the overhead lines is to provide screening from isolated properties and from users of the Public Right of Way (PRoW) network along the southern edge of Fristonmoor.	Planting of woodland blocks will provide habitat for local wildlife such as squirrels, foxes and deer, including protected species such as badgers. These areas of woodland may also provide roosts for bat species or barn owls as individual trees mature.
New hedgerow planting along historic hedgerow field boundaries	***Section 3.5.7***	Substantial lengths of new native hedgerow planting and the reinstatement of existing gappy hedgerows around the onshore substations. Hedgerow reinforcement and small woodland block planting to the north of the overhead lines is to provide screening from isolated properties and from users of the PRoW network along the southern edge of Fristonmoor. Hedgerow planting to the west and south-west is intended to provide screening from residential	The planting of hedgerows will provide wildlife corridors, most notably commuting and foraging habitat for bats which are a European Protected Species, as well as providing commuting and foraging habitat for local bird species. Verge and hedgerow habitat would provide wildlife corridors between existing ponds and the proposed SuDS ponds for local

Proposal for Ecological Enhancement	Section of OLEMS	Description of Ecological Enhancement Measures	Ecological Enhancement Achieved
		receptors along the Saxmundham Road, and from road-users of Saxmundham Road.	wildlife. Verge habitat will additionally provide refuge for local reptile species.
Hedgerows	***Section 5.3.3.3***	There will be improvements made to hedgerows immediately adjacent to the removed sections where possible where these fall within the onshore development area.	
Individual field boundary tree line planting	***Section 3.5.6***	Individual tree planting will be undertaken along field boundary hedgerows to create characteristic tree lined field edges, where existing or proposed hedgerows are supplemented with larger hedgerow trees, planting at a larger size (e.g. 1.6m) and maintained to grow higher than the main hedgerow.	Individual trees will be maintained to form characteristic tree lines along hedges, verges and field boundaries. Over time, these trees will contribute towards a network of historic green lanes, most of which have been lost to agricultural intensification over the years.
Sustainable Drainage System (SuDS)	***Section 3.5.12***	The outline design of the onshore substation drainage has been designed in accordance with best practice as referenced in the SuDS Manual (CIRIA, 2015). This includes maximising amenity and biodiversity benefits, whilst delivering the key objectives of managing flood risk and water quality.	Benefit to reducing downstream flood risk in the village of Friston. The SuDS basins are larger than required for any potential impact associated with storm event runoff. The wetland habitat provided by the establishment of the SuDS ponds will be beneficial to local wildlife species.
Grasslands	***Section 3.5.8***	Species rich grassland areas will be established, particularly in the areas immediately around the onshore substations and National Grid substation locations. This may include:	Species rich grassland areas will be established, particularly in the areas immediately around the onshore substations and National Grid substation

Proposal for Ecological Enhancement	Section of OLEMS	Description of Ecological Enhancement Measures	Ecological Enhancement Achieved
		• G1 Amenity Grass Mix - General purpose amenity grass mix, used for verges, embankments, filter strip, swale sides. • G2 Species rich grass mix - (grasses and wildflowers) will be established to provide a low maintenance ground cover in areas that are not to be returned to agricultural use or planted as woodland. These include constrained areas beneath the existing overhead transmission lines (and pylons) and within the onshore cable route into the onshore substation, providing biodiversity value and natural appearance to contrast with the onshore infrastructure. • G3 Wetland Grass mix - grass mix appropriate for areas that are expected to be frequently and regularly inundated, such as the SuDS basins.	locations, and in smaller fields that would not be viable for agricultural use, to provide a low maintenance ground cover which also enhances the local biodiversity in areas that are not to be returned to agricultural use or planted as woodland. The SuDS basin and associated open swales will be seeded with a wet grass mix. Amenity grasses will be used immediately next to the access road and perimeter foot track around the substation. Verge and hedgerow habitat would provide wildlife corridors between existing ponds and the proposed SuDS ponds for local wildlife. Verge habitat will additionally provide refuge for local reptile species.
Onshore Cable Route			
Overall	Habitats affected by the cable route will be lost temporarily as a result of construction, however, they will be replaced 'like for like' where possible to ensure habitat connectivity is not affected. At least an equivalent area of woodland that is lost will be replanted following the completion of works, and hedgerows will be reinstated.		
Hedgerows	***Section 5.3.3.3***	There will be improvements made to hedgerows immediately adjacent to the removed sections where possible and where within the onshore development area.	
Turtle dove	***Section 6.3.4.1***	In response to possible loss of turtle dove foraging habitat identified in ***section 26.3.1.3*** of ES Chapter ***23 Onshore Ornithology*** (APP-071), a location within the onshore development area	

Proposal for Ecological Enhancement	Section of OLEMS	Description of Ecological Enhancement Measures	Ecological Enhancement Achieved
		has been identified for sowing turtle dove seed mix, to create optimal feeding habitat throughout the construction phase in proximity to recorded turtle dove territories.	
Nightingale	***Section 6.3.4.2***	Habitat suitable for nightingale within the SPA/SSSI, and within the onshore development area, would be established and managed following recommended guidelines (e.g. British Trust for Ornithology, 2015), with the aim of providing optimal habitat for breeding nightingale. This may involve thinning or removal of bracken (which dominates in much of this area) or maintenance of scrub by cutting any patches that are getting too old and leggy, and therefore providing a supply of vigorous new growth. A dense field margin of rank grass and taller herbs around the scrub should also be retained by avoiding mowing during the breeding season. Note that although no significant impacts were identified on species nightjar and woodlark (and therefore no additional mitigation is proposed), the additional mitigation proposed for nightingale would also benefit these species. It should be noted habitat suitable for nightingale would only be provided should an open trench method be used to cross the SPA.	
Barn Owl	***Section 6.3.4.3***	Any potential losses of territories will aim to be compensated for by the erection of new nest boxes where possible in suitable locations within the local area, in consultation with the Suffolk Community Barn Owl Project. It would be ensured that new nest boxes are in place and available to barn owls prior to the commencement of construction.	

5 Conclusion

42. This clarification note has outlined the opportunities for ecological enhancement to be provided by the Projects by way of various measures proposed within the ES and OLEMS and presented in ***section 4***.

43. There is also the potential for the Projects to deliver an additional 512 hedgerow units and to enhance 8 hedgerow units at the at the onshore substations and National Grid infrastructure locations.

44. As discussed in ***section 1.1.1***, the Projects are not required to, and have not been developed to, meet a 'biodiversity gain' test. Nonetheless the information presented within this clarification note demonstrates that no net loss of biodiversity will result from the Projects. 310 habitat units may be lost, however 229 of these units are cropland habitats with low ecological value, and 71 habitat units will be delivered. With regards to hedgerow units 15 will be lost, 512 hedgerow units will be delivered, and 8 units will be enhanced. Furthermore, as identified in ***Table 4***, in many instances there will be notable opportunities for ecological enhancement which the Projects will seek to deliver and develop through the Landscape Management Plans and Ecological Management Plans.

6 References

Construction Industry Research and Information Association (2015) SuDs Manual [Online] Available at: https://www.ciria.org/CMDownload.aspx?ContentKey=14d9414a-8ae9-4ba5-b62e-5779cc392015&ContentItemKey=a97fe153-1306-4a4c-b1ff-f11d6bb99f28 [Accessed 21/09/2020]

DEFRA (2019) Net Gain: summary of responses and government response [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819823/net-gain-consult-sum-resp.pdf [Accessed 14/08/2020].

East Suffolk Council (2019) Suffolk Coastal Final Draft Local Plan

Natural England (2019) The Biodiversity Metric [Online] Available at: http://publications.naturalengland.org.uk/publication/5850908674228224 [Accessed 21/09/2020]

Suffolk Biodiversity Partnership (2012) Suffolk Local Biodiversity Action Plan [Online] Available at: https://www.suffolkbis.org.uk/sites/default/files/biodiversity/priorityspecieshabitats/actionplans/Planning_BAP_Final%2018%20May%202012.pdf [Accessed 14/08/2020].

Appendix 1: Biodiversity Baseline Calculations

Table A1 Baseline Biodiversity Unit Calculations for Habitats along the Onshore Cable Corridor

Habitat type	Condition	Area (ha)	Total habitat Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	0.66	11.92	0.00	11.92
Woodland and Forest - lowland mixed deciduous woodland	Good	0.49	10.71	0.00	10.71
Woodland and Forest - lowland mixed deciduous woodland	Good	0.98	21.32	0.00	21.32
Woodland and Forest - lowland mixed deciduous woodland	Good	0.21	4.60	0.00	4.60
Woodland and Forest - lowland mixed deciduous woodland	Good	0.32	7.03	0.00	7.03
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	0.01	0.20	0.00	0.20
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	0.00	0.00	0.00	0.00
Woodland and Forest - Other woodland; mixed	Good	1.60	21.12	0.00	21.12
Woodland and Forest - Other woodland; broadleaved	Good	0.00	0.00	0.00	0.00
Heathland and shrub - Mixed scrub	Good	0.03	0.40	0.00	0.40
Heathland and shrub - Mixed scrub	Moderate	0.00	0.00	0.00	0.00
Heathland and shrub - Mixed scrub	Moderate	0.01	0.11	0.00	0.11

Habitat type	Condition	Area (ha)	Total habitat Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Heathland and shrub - Mixed scrub	Good	0.72	9.52	0.00	9.52
Heathland and shrub - Mixed scrub	Moderate	2.08	18.28	0.00	18.28
Heathland and shrub - Mixed scrub	Moderate	0.02	0.19	0.00	0.19
Heathland and shrub - Mixed scrub	Moderate	1.07	9.40	0.00	9.40
Grassland - Modified grassland	Moderate	3.22	14.18	0.00	14.18
Grassland - Modified grassland	Moderate	0.28	1.23	0.00	1.23
Grassland - Modified grassland	poor	1.51	3.33	0.00	3.33
Grassland - Modified grassland	poor	0.70	1.54	0.00	1.54
Grassland - Modified grassland	poor	2.70	5.94	0.00	5.94
Grassland - Modified grassland	poor	1.53	3.36	0.00	3.36
Grassland - Modified grassland	Moderate	1.71	7.51	0.00	7.51
Cropland - Cereal crops	N/A -Agricultural	5.17	10.34	0.00	10.81
Cropland - Cereal crops	N/A -Agricultural	10.38	20.77	0.00	20.77
Cropland - Cereal crops	N/A -Agricultural	6.94	13.88	0.00	13.88
Cropland - Cereal crops	N/A -Agricultural	2.02	4.05	0.00	4.05
Cropland - Cereal crops	N/A -Agricultural	0.01	0.01	0.00	0.01
Cropland - Cereal crops	N/A -Agricultural	4.65	9.30	0.00	9.30

Habitat type	Condition	Area (ha)	Total habitat Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Cropland - Cereal crops	N/A -Agricultural	4.90	9.80	0.00	9.80
Cropland - Cereal crops	N/A -Agricultural	14.71	29.42	0.00	29.42
Cropland - Cereal crops	N/A -Agricultural	7.85	15.70	0.00	15.70
Cropland - Cereal crops	N/A -Agricultural	0.01	0.02	0.00	0.02
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00
Cropland - Cereal crops	N/A -Agricultural	0.31	0.62	0.00	0.62
Cropland - Cereal crops	N/A -Agricultural	6.19	12.38	0.00	12.38
Cropland - Cereal crops	N/A -Agricultural	1.30	2.61	0.00	2.61
Cropland - Cereal crops	N/A -Agricultural	1.33	2.66	0.00	2.66
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00
Cropland - Cereal crops	N/A -Agricultural	9.15	18.31	0.00	18.31
Cropland - Cereal crops	N/A -Agricultural	2.00	3.99	0.00	3.99
Cropland - Cereal crops	N/A -Agricultural	7.82	15.64	0.00	15.64
Cropland - Cereal crops	N/A -Agricultural	4.28	8.57	0.00	8.57
Cropland - Cereal crops	N/A -Agricultural	9.99	19.98	0.00	19.98
Cropland - Cereal crops	N/A -Agricultural	2.19	4.38	0.00	4.38

Habitat type	Condition	Area (ha)	Total habitat Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Cropland - Cereal crops	N/A -Agricultural	0.01	0.01	0.00	0.01
Cropland - Cereal crops	N/A -Agricultural	2.32	4.64	0.00	4.64
Cropland - Cereal crops	N/A -Agricultural	15.63	31.25	0.00	31.25
Cropland - Cereal crops	N/A -Agricultural	0.05	0.10	0.00	0.10
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00
Total	**-**	**139.16**	**390.13**	**0.00**	**390.13**

Table A2 Baseline Biodiversity Unit Calculations for Habitats at the Onshore Substations and National Grid Infrastructure Locations

Habitat type	Condition	Area (ha)	Total habitat Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	2.94	53.27	53.27	0.00
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	0.24	4.42	4.42	0.00
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	0.01	0.17	0.17	0.00
Woodland and Forest - lowland mixed deciduous woodland	Fairly Good	0.85	15.41	15.41	0.00
Heathland and shrub - Mixed scrub	Moderate	0.17	1.52	1.52	0.00
Grassland - Modified grassland	Moderate	1.15	5.05	5.05	0.00
Grassland - Modified grassland	poor	0.39	0.86	0.86	0.00
Grassland - Modified grassland	poor	0.00	0.00	0.00	0.00
Cropland - Cereal crops	N/A -Agricultural	36.72	73.43	73.43	0.00
Cropland - Cereal crops	N/A -Agricultural	16.56	33.11	33.11	0.00
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00
Cropland - Cereal crops	N/A -Agricultural	1.61	3.22	3.22	0.00
Cropland - Cereal crops	N/A -Agricultural	31.82	63.64	63.64	0.00
Cropland - Cereal crops	N/A -Agricultural	0.92	1.84	1.84	0.00
Cropland - Cereal crops	N/A -Agricultural	0.00	0.00	0.00	0.00

Habitat type	Condition	Area (ha)	Total habitat Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Cropland - Cereal crops	N/A -Agricultural	1.38	2.75	2.75	0.00
Cropland - Cereal crops	N/A -Agricultural	1.75	3.50	3.50	0.00
Cropland - Cereal crops	N/A -Agricultural	11.44	22.88	22.88	0.00
Cropland - Cereal crops	N/A -Agricultural	0.01	0.02	0.02	0.00
Cropland - Cereal crops	N/A -Agricultural	2.41	4.82	4.82	0.00
Cropland - Cereal crops	N/A -Agricultural	0.46	0.93	0.93	0.00
Cropland - Cereal crops	N/A -Agricultural	8.80	17.59	17.59	0.00
Cropland - Cereal crops	N/A -Agricultural	0.58	1.16	1.16	0.00
Cropland - Cereal crops	N/A -Agricultural	0.02	0.05	0.05	0.00
Total	**-**	**120.22**	**309.64**	**309.64**	**0.00**

Table A3 Baseline Biodiversity Unit Calculation for Hedgerows (Linear Habitats) along the Onshore Cable Corridor

Habitat type	Condition	Length (km)	Total hedgerow Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Native Hedgerow	Moderate	0.11	0.52	0.00	0.52
Native Hedgerow	Moderate	0.00	0.02	0.00	0.02
Native Hedgerow with trees	Moderate	0.31	1.43	0.00	1.43
Native Hedgerow	Poor	0.12	0.27	0.00	0.27
Native Hedgerow	Poor	0.00	0.00	0.00	0.00
Native Hedgerow	Poor	0.07	0.15	0.00	0.15
Native Hedgerow	Poor	0.07	0.16	0.00	0.16
Native Hedgerow with trees	Moderate	0.07	0.33	0.00	0.33
Native Hedgerow with trees	Moderate	0.07	0.33	0.00	0.33
Native Hedgerow	Moderate	0.18	0.83	0.00	0.83
Native Species Rich Hedgerow with trees	Good	0.05	0.69	0.00	0.69
Native Hedgerow	Moderate	0.29	1.35	0.00	1.35
Native Hedgerow with trees	Moderate	0.01	0.05	0.00	0.05
Native Hedgerow with trees	Moderate	0.19	0.87	0.00	0.87
Native Hedgerow	Moderate	0.08	0.36	0.00	0.36

Habitat type	Condition	Length (km)	Total hedgerow Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost
Native Hedgerow with trees	Moderate	0.10	0.52	0.00	0.52
Native Hedgerow	Poor	0.07	0.18	0.00	0.18
Native Hedgerow	Poor	0.16	0.38	0.00	0.38
Native Hedgerow	Poor	0.07	0.16	0.00	0.16
Native Hedgerow	Good	0.26	1.95	0.00	1.95
Native Hedgerow with trees	Good	0.24	1.82	0.00	1.82
Native Hedgerow with trees	Moderate	0.15	0.78	0.00	0.78
Native Hedgerow with trees	poor	0.07	0.16	0.00	0.16
Native Hedgerow	Poor	0.17	0.39	0.00	0.39
Native Hedgerow	Poor	0.01	0.01	0.00	0.01
Native Hedgerow with trees	Good	0.22	1.49	0.00	1.49
Native Hedgerow	Good	0.22	1.53	0.00	1.53
Native Hedgerow	Moderate	0.00	0.01	0.00	0.01
Native Hedgerow	Poor	0.37	0.85	0.00	0.85
Total	**-**	**3.73**	**17.59**	**0.00**	**17.59**

Table A4 Baseline Biodiversity Unit Calculation for Hedgerows (Linear Habitats) at the Onshore Substations and National Grid Infrastructure Locations

Habitat type	Condition	Length (km)	Total hedgerow Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost	Biodiversity Units enhanced
Native Hedgerow with trees	Moderate	0.09	0.40	0.00	0.00	0.00
Native Hedgerow with trees	Moderate	0.09	0.45	0.00	0.00	0.00
Native Hedgerow with trees	Moderate	0.10	0.52	0.00	0.00	0.52
Native Hedgerow	Poor	0.12	0.31	0.00	0.00	0.31
Native Hedgerow with trees	Moderate	0.08	0.38	0.00	0.00	0.38
Native Hedgerow	Moderate	0.18	0.93	0.03	0.00	0.90
Native Hedgerow	Moderate	0.06	0.29	0.00	0.00	0.29
Native Hedgerow	Moderate	0.07	0.34	0.00	0.00	0.34
Native Hedgerow	Moderate	0.18	0.93	0.00	0.00	0.93
Native Species Rich Hedgerow with trees	Good	0.14	2.09	0.00	0.00	2.09
Native Hedgerow	Moderate	0.08	0.40	0.40	0.00	0.00
Native Hedgerow	Moderate	0.13	0.68	0.68	0.00	0.00
Native Hedgerow with trees	Moderate	0.19	0.94	0.94	0.00	0.00

Habitat type	Condition	Length (km)	Total hedgerow Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost	Biodiversity Units enhanced
Native Hedgerow	Moderate	0.13	0.65	0.40	0.00	0.25
Native Hedgerow with trees	Moderate	0.18	0.91	0.91	0.00	0.00
Native Hedgerow with trees	Moderate	0.07	0.36	0.006	0.00	0.35
Native Hedgerow with trees	Moderate	0.00	0.02	0.02	0.00	0.00
Native Hedgerow - Associated with bank or ditch	Moderate	0.37	3.39	3.39	0.00	0.00
Native Hedgerow with trees	Moderate	0.08	0.38	0.38	0.00	0.00
Native Hedgerow with trees	Moderate	0.03	0.15	0.15	0.00	0.00
Native Hedgerow - Associated with bank or ditch	Poor	0.16	0.73	0.73	0.00	0.00
Native Hedgerow with trees	Moderate	0.05	0.24	0.24	0.00	0.00
Native Hedgerow - Associated with bank or ditch	Moderate	0.01	0.13	0.13	0.00	0.00

Habitat type	Condition	Length (km)	Total hedgerow Units	Biodiversity Units permanently lost	Biodiversity Units temporarily lost	Biodiversity Units enhanced
Native Hedgerow with trees - Associated with bank or ditch	Moderate	0.17	1.72	1.72	0.00	0.00
Native Hedgerow with trees	Moderate	0.16	0.82	0.82	0.00	0.00
Native Hedgerow with trees	Good	0.02	0.11	0.11	0.00	0.00
Native Hedgerow	Good	0.23	1.58	1.58	0.00	0.00
Native Hedgerow	Good	0.03	0.23	0.23	0.00	0.00
Native Hedgerow	Moderate	0.12	0.61	0.61	0.00	0.00
Native Hedgerow	Moderate	0.14	0.69	0.69	0.00	0.00
Native Hedgerow	Moderate	0.19	0.86	0.86	0.00	0.00
Native Species Rich Hedgerow with trees	Good	0.03	0.39	0.39	0.00	0.00
Total	**-**	**3.68**	**22.63**	**15.42**	**0.00**	**6.36**