East Anglia TWO Offshore Windfarm

Outline Landscape and Ecological Management Strategy

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Glossary of Acronyms

ACoW	Arboricultural Clerk of Works
AMS	Arboricultural Method Statement
BAP	Biodiversity Action Plan
BBPP	Breeding Bird Protection Plan
BCT	Bat Conservation Trust
BTO	British Trust for Ornithology
CoCP	Code of Construction Practise
CCS	Construction Consolidation Sites
CIEEM	Chartered Institute for Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
CMS	Construction Method Statement
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
ECoW	Environmental Clerk of Works
EcIA	Ecological impact Assessment
EIA	Environmental Impact Assessment
EMP	Ecological Management Plan
EPS	European Protected Species
ES	Environmental Statement
ESC	East Suffolk Council
ETG	Expert Topic Group
EU	European Union
ha	Hectares
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
ILE	Institute of Lighting Engineers
LBAP	Local Biodiversity Action Plan
LCT	Landscape Character Type
LMP	Landscape Management Plan
LNR	Local Nature Reserve
m	Metres
NCA	National Character Area
NPS	National Policy Statement
OLEMS	Outline Landscape and Ecological Management Strategy
OLMP	Outline Landscape Mitigation Plan
PEIR	Preliminary Environmental Information Report
PRoW	Public Rights of Way
RAMS	Risk Assessments and Method Statements
SPA	Special Protection Area
SPR	ScottishPower Renewables
SSSI	Site of Special Scientific Interest
UK BAP	UK Biodiversity Action Plan
UKHPI	UK Habitat of Principal Importance

Glossary of Terminology

Applicant	East Anglia TWO Limited.
Cable sealing end compound	A compound which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Cable sealing end (with circuit breaker) compound	A compound (which includes a circuit breaker) which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Construction consolidation sites	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.
Development area	The area comprising the onshore development area and the offshore development area (described as the 'order limits' within the Development Consent Order).
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.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
HDD temporary working area	Temporary compounds which will contain laydown, storage and work areas for HDD drilling works.
Jointing bay	Underground structures constructed at intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers within the onshore cable route housing electrical earthing links.
Mitigation areas	Areas captured within the onshore Development Area specifically for mitigating expected or anticipated impacts.
National electricity grid	The high voltage electricity transmission network in England and Wales owned and maintained by National Grid Electricity Transmission
National Grid infrastructure	A National Grid substation, cable sealing end compounds, cable sealing end (with circuit breaker) compound, underground cabling and National Grid overhead line realignment works to facilitate connection to the national electricity grid, all of which will be consented as part of the proposed East Anglia TWO project Development Consent Order but will be National Grid owned assets.
National Grid overhead line realignment works	Works required to upgrade the existing electricity pylons and overhead lines (including cable sealing end compounds and cable sealing end (with circuit breaker) compound) to transport electricity from the National Grid substation to the national electricity grid.

National Grid overhead line realignment works area	The proposed area for National Grid overhead line realignment works.
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 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 project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Natura 2000 site	A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive.
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.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO project from landfall to the connection to the national electricity grid.
Onshore preparation works	Activities to be undertaken prior to formal commencement of onshore construction such as pre–planting of landscaping works, archaeological investigations, environmental and engineering surveys, diversion and laying of services, and highway alterations.
Onshore substation	The East Anglia TWO 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 project.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.

Outline Landscape and Ecological Management Strategy

1 Introduction

1.1 Background

1. This Outline Landscape and Ecological Management Strategy (OLEMS) relates to the proposed East Anglia TWO project and associated infrastructure.

2. The OLEMS forms part of a set of documents that supports the Environmental Statement (ES) (document reference 6.1) submitted by East Anglia TWO Ltd (hereafter referred to as 'the Applicant') as part of the Development Consent Order (DCO) application for the proposed East Anglia TWO project.

3. A final detailed Landscape Management Plan (LMP) and Ecological Management Plan (EMP) will be produced post-consent in order to discharge the relevant DCO requirements, prior to construction of the proposed East Anglia TWO project, and will be in line with this OLEMS.

4. The final LMP and EMP will provide a key mechanism, required to discharge relevant DCO requirements, through which the relevant regulatory authorities can be assured that ecological management and provision of landscaping associated with the construction of the onshore infrastructure will be formally controlled and implemented.

5. This OLEMS reinforces commitments made in the ES and the below Requirements of the draft DCO:

   - DCO Requirement – Provision of landscaping; and
   - DCO Requirement – Ecological Management Plan.

1.2 Structure of the OLEMS

6. This OLEMS summarises the general landscape and ecology principles and mitigation measures to be adopted during construction and operation of the onshore infrastructure associated with the proposed East Anglia TWO project and will provide the framework for the preparation of the final, more detailed LMP and EMP which will be developed post-consent.

7. The OLEMS begins by giving an outline of the proposed East Anglia TWO project parameters and details aims and objectives of this OLEMS in relation to

compliance in ***Section 2***. ***Section 3*** provides the Outline Landscape Mitigation Plan (OLMP) that has been developed in consultation with the Local Planning Authority and other key stakeholders (see ***section 3.4***); and which will be the basis of the final LMP.

8. ***Section 4*** addresses habitats and non-avian species. Each relevant habitat or species is listed, along with the following:

- Detail of a species-specific baseline within the onshore development area for each ecological receptor;
- A description of any mitigation measures embedded into the project design;
- An outline of any proposed pre-construction survey work; and
- A summary of any additional mitigation measures required to minimise impacts to ecology.

9. ***Section 5*** addresses onshore ornithology species. A baseline is given for each relevant species, followed by a summary of embedded mitigation measures relevant to all ornithology species. Embedded mitigation measures are then detailed alongside any additional mitigation measures required to minimise impacts to birds.

10. ***Section 6*** provides a summary of timings for completion of the agreed mitigation measures, taking account of any seasonal constraints for individual species or habitats.

11. ***Section 7*** provides mitigation during operation.

12. ***Section 8*** discusses requirements for monitoring of agreed mitigation measures.

13. ***Section 9*** provides detail on the EMP, including the responsibilities of the contractor and ECoW, including ***section 9.3*** which considers any licence requirements necessary to undertake the agreed mitigation measures.

1.3 Purpose and Scope

14. The purpose of this OLEMS is to outline the requirement for landscape and ecological (including ornithological) mitigation measures that are reflective of the surveys and impact assessment carried out for the onshore infrastructure of the proposed East Anglia TWO project, detailed in the Environmental Statement (ES) (document reference 6.1). The document supports the construction management team in ensuring compliance with the requirements in the DCO. The document is also a mechanism to deliver environmental commitments as set out in the ES and to promote environmental and construction best practice. The final detail of

the mitigation and enhancement measures will be provided through the Landscape Management Plan (LMP) and Ecological Management Plan (EMP), pursuant to relevant requirements of the draft DCO which form part of the final LMP and EMP.

15. The final LMP and EMP will be produced in accordance with the measures set out in this OLEMS and will be subject to agreement by the relevant regulatory authorities, in consultation with the Local Planning Authority and other relevant stakeholders. Under the DCO the Applicant will be required to implement the measures set out in the agreed LMP and EMP. Details of implementation measures, including an implementation timetable, will be provided in the final LMP and EMP.

16. The OLEMS has the following objectives:

- To clearly outline the framework for landscape mitigation and management.
- To clearly outline the framework for ecological management.
- To provide the basis for the agreement of a detailed Landscape Management Plan (LMP) for the onshore substation and National Grid substation. This scheme will detail how ecological landscape and Sustainable Drainage System (SuDS) requirements will be integrated at the substation location, considering (as appropriate) the Design and Access Statement (document reference 8.3).
- To provide the basis for the agreement of a final LMP for the protection and restoration of impacted and replanted trees and hedges along the onshore cable route.
- To ensure all reasonable precautions are taken by the Applicant and their contractors to safeguard protected species. This OLEMS also acts as the basis for an Ecological Management Plan (EMP), and Breeding Bird Protection Plan (BBPP). A final detailed scheme of protection and mitigation measures for any European Protected Species (EPS) and Schedule 1 bird species[1] shown to be present, prior to construction, will be agreed with the Local Planning Authority under the relevant requirement of the draft DCO.
- To form the basis of a process of ongoing dialogue / forum with the Local Planning Authority leading up to and during construction to ensure that the Local Planning Authority are kept informed and satisfied of the implementation of the OLEMS (and the plans of which it forms the basis) and in order that they can also keep communities informed.

[1] Species afforded enhanced legal protection from disturbance, as listed in Schedule 1 of the Wildlife and Countryside Act 1981.

17. It is expected that the schemes of planting and aftercare for the onshore cable route, onshore substation site and National Grid infrastructure would be delivered by contractors who can demonstrate appropriate experience and capacity to deliver effective establishment and robust aftercare and provide a consistent quality of work across the proposed East Anglia TWO project.

1.4 Relationship with Other Documents

18. A number of the measures set out in the OLEMS overlap to some degree with measures detailed within other documents submitted as part of the DCO application. The OLEMS should therefore be read in conjunction with the following other documents:

- ES Volume 1 ***Chapter 6 Project Description*** (document reference 6.1.6);
- ES Volume 1 ***Chapter 29 Onshore Landscape and Visual Impact Assessment*** (LVIA) (document reference 6.1.29);
- ES Volume 1 ***Chapter 22 Onshore Ecology*** (document reference 6.1.22);
- ES Volume 1 ***Chapter 23 Onshore Ornithology*** (document reference 6.1.23);
- ES Volume 1 ***Chapter 20 Water Resources and Flood Risk*** (document reference 6.1.20);
- Outline Code of Construction Practice (document reference 8.1);
- Outline Design and Access Statement (document reference 8.3).

2 Description of the Development

2.1 Summary of Project

19. Works and locations within the scope of this document include construction (including enabling works), commissioning and re-instatement of the onshore infrastructure of the proposed East Anglia TWO project from the landfall located approximately 500m north of the edge of Thorpeness to the onshore substation and National Grid infrastructure. Works include:

- Temporary works associated with landfall Horizontal Directional Drilling (HDD) and transition bay excavation;
- Offshore export cable installation from the HDD temporary works area to the transition bays;
- Onshore cable installation along the onshore cable route including jointing bays and potential HDD;
- Temporary works associated with the onshore cable route, onshore substation, and National Grid infrastructure, including enabling works such as

the establishment of a haul road, Construction Consolidation Sites (CCSs) and working area (any area with the onshore development area where construction activities are taking place);

- Onshore substation, and temporary / permanent access;
- National Grid infrastructure;
- Interface between the onshore substation and National Grid infrastructure; and
- Reinstatement and mitigation works enacted during the construction phase.

20. The term 'construction' in the OLEMS includes all onshore enabling works, material delivery, excavated material disposal, waste removal and all related engineering and construction activities as defined within the DCO.

2.2 Construction Activities (Compliance)

21. An Ecological Clerk of Works (ECoW) (and/or Arboricultural Clerk of Works (ACoW) if required) would be present on site when required during construction.

22. If protected species or breeding birds are unexpectedly found or trees and hedges specified to be retained are found to be damaged during construction, the following action would take place:

- Works in the immediate area would cease immediately.
- The ECoW and/or ACoW and Construction Manager would be informed.
- The relevant area would be demarcated, and access would be restricted if necessary.
- A way forward would be established and agreed and if necessary licences and authorisations would be sought.
- Cause of damage would be investigated in order to prevent similar damage occurring elsewhere during construction.
- Works would restart once the ECoW and/or ACoW, and (in relation to protected species or breeding birds) relevant regulatory authorities are satisfied with the works proposed.

23. The appointment of the ECoW (and the ACoW if required), would be appointed ahead of the commencement of any relevant works. The Applicant will work with the relevant regulatory authorities to ensure appropriate resourcing is in place to monitor compliance with the provisions of the OLEMS, and the plans and schemes of which it forms the basis.

2.2.1 Local Community Liaison

24. The Applicant will ensure effective and open communication with local residents and businesses that may be affected by the construction works. Communications will be co-ordinated on site by a designated member of the construction management team. A proactive public relations campaign will be maintained, keeping local residents informed of the type and timing of works involved, paying particular attention to potential evening and night time works and activities which may occur in close proximity to receptors. A combination of communication channels, for example information boards and parish council meetings, will be employed to keep local residents informed.

25. A designated local community liaison officer will respond to any public concerns, queries or complaints in a professional and diligent manner.

26. Parish Councils in the relevant area will be contacted (in writing) in advance of the proposed works and ahead of key milestones. This information will include indicative details for timetable of works, a schedule of working hours, the extent of the works, and a contact name, address and telephone number in case of complaint or query. Enquiries will be dealt with in an expedient and courteous manner. Any complaints will be logged, investigated and, where appropriate, rectifying action will be taken.

27. A Stakeholder Communications Plan will be produced as part of the final Code of Construction Practice, as secured under the relevant requirement of the DCO.

3 Outline Landscape Mitigation Plan (OLMP)

3.1 Scope of the OLMP

3.1.1 Technical Scope

28. This OLMP provides outline landscape mitigation proposals incorporated into the proposed East Anglia TWO project (referred to in the ***Chapter 29 Landscape and Visual Impact Assessment*** of the ES as mitigation) to address potential impacts on landscape and visual receptors; and will be used to inform the final LMP. Potential impacts on these receptors are considered in ***Chapter 29 Landscape and Visual Impact Assessment***.

29. The measures covered by this OLMP include:

- Proposals for woodland and native hedgerow planting at the onshore substation, National Grid infrastructure and along the onshore cable route.

- Proposals for reinstatement of land at the onshore substation, National Grid infrastructure and onshore cable route.
- Proposals for reinstatement and planting of historic hedgerow field boundaries at the onshore substation and National Grid infrastructure.
- Proposals for a surface water management SuDS basin to manage surface water run-off from the onshore substation and National Grid substation.
- Proposals for an additional SuDS basin (or similar) to assist in the management of surface water inflows to the substation area, which will in turn reduce flood risk in the village of Friston.
- Proposals for potential Public Rights of Way (PRoW) diversions routed around the onshore substation and National Grid infrastructure.
- Proposals for biodiversity mitigation within the onshore development area. These proposals will be developed further post-consent; in consultation with relevant stakeholders and the details will be provided within the final LMP and EMP.
- This OLMP provides solutions for landscape planting proposals for development with either AIS (Air Insulated Switchgear) or GIS (Gas Insulated Switchgear) National Grid substation designs (refer to ***Chapter 6 Project Description*** for associated parameters for AIS or GIS NGET substation designs). The planting and landscape scheme has also been designed in order to not sterilise land for potential future development associated with the National Grid substation.

3.1.2 Spatial Scope

30. This OLMP applies to the onshore infrastructure within the onshore development area.

31. Offsite planting (outside the onshore development) is not classed as mitigation (as mitigation within the onshore development area is considered sufficient) and does not form part of the proposed East Anglia TWO project DCO application.

3.1.3 Temporal Scope

32. This OLMP primarily relates to measures to be employed during the construction phase of the proposed East Anglia TWO project, or immediately thereafter (until such time as reinstatement measures are deemed to be successful). Measures to be employed during planned maintenance throughout the operational phase are also included, where relevant.

33. A programme will be provided in the final Landscape Management Plan (LMP), once further details of all the relevant measures have been developed and agreed with the Local Planning Authority. The LMP will provide for the ongoing

management of landscaping developed under the LMP beyond its maintenance period as required for the remaining operational life of the onshore substation and/or National Grid substation.

3.2 Onshore Substation and National Grid Infrastructure Onsite Landscape Plan

3.2.1 Baseline Description

3.2.1.1 Landscape Character

34. At the national level, the onshore substation and National Grid infrastructure are located within the Norfolk and High Suffolk Claylands (83) National Character Area (NCA), which is to the west and adjacent to the inland edge of the Suffolk Coast and Heaths NCA (82). This is predominantly a farming landscape, with a strong utilitarian and rural character, evoked in its irregular field patterns. It is a long-settled landscape, with nucleated villages intermixed with dispersed hamlets and farmsteads. Large areas of woodland are relatively scarce, but the extent of scattered smaller woodlands, hedges and hedgerow trees are still notable elements in the landscape, often confining views.

35. At the regional level, the onshore substation and National Grid infrastructure fall mainly within the Ancient Estate Claylands Landscape Character Type (LCT) and partially within the Estate Sandlands LCT, as defined in the Suffolk Landscape Character Assessment (Suffolk County Council 2008/2011).

36. The Ancient Estate Claylands LCT is generally formed by a broad flat plateau, with farmland enclosed by hedgerows and blocks of woodland. The Ancient Estate Claylands LCT is mostly used as farmland with medium to large fields enclosed by hedgerows, hedgetrees and trees, with also intermittent blocks of woodland. While the plateau landform ensures some longer and more open views occur, a much more intimate character is created by the enclosed nature of much of this landscape. Small villages and scattered farming settlement occur across this landscape. The key characteristics of this Ancient Estate Claylands LCT are described as follows:

- Dissected plateau is composed of glacial till or boulder clay.
- Enclosure pattern is generally ancient and organic in appearance, with some estate influence where rationalisation changed the field pattern into larger, more easily managed units, with straighter boundaries.
- The fields are medium to large and the hedges vary from taller hedges with a mix of trees and shrubs, to single-species hedges that are more tightly controlled.
- Enclosed former greens and common pastures.

- The landscape was often utilised for World War II airfields, which has left a legacy of runway remains and buildings, some of which have been converted to modern industrial use.
- The settlement pattern consists of occasional villages and numerous, dispersed hamlets and farmsteads.
- Vernacular buildings consist of timber-framed structures interspersed with brick ones, though the brick appearance is frequently just a façade added to an earlier timber frame.
- Blocks of ancient semi-natural woodland are scattered throughout the area, made up of oak (*Quercus robur*), ash (*Fraxinus excelsior*), field maple (*Acer campestre*), hornbeam (*Caripinus*) and small-leaved lime (*Tilia cordata*).
- Hedgerow trees are ubiquitous and in many places this landscape can feel well wooded.
- Despite the reasonably well-wooded landscape, the plateau landform means that the views are open and can be long. However, the comprehensive network of winding lanes and tall hedges means that other areas can be much more intimate.

37. At the local level, The Suffolk Coastal LCA (Suffolk Coastal District Council, 2018) identifies these landscape character areas, in which the onshore substation and National Grid infrastructure are located, as the Heveningham and Knodishall Estate Claylands (L1) and the Aldringham and Friston Sandlands (K3). The characteristics that are locally distinctive in the Friston area (in the area around the onshore substations) are described as follows with reference to field survey and the Suffolk Coastal LCA:

- The characteristic arrangement of the parish consisting of Friston village, church, village green and detached parishes, such as Fristonmoor, which is typical in Suffolk.
- The visual relationship between the detached parish of Fristonmoor and the village to the south, which is visually connected in views to Friston church and through the existing PRoW between the village and parish.
- Areas of land that have the appearance of common on the village edge provide texture and interest.
- The network of small-scale fields to the north of Friston, with strong hedgerow field boundaries and scattered mature deciduous field boundary trees are locally distinctive features. The enclosure pattern is generally ancient, but the field patterns tend to be straight and regularised.

- Quiet farmland, with a simple, rural character but a strong sense of agri-business land use evident amongst the medium to large fields towards Fristonmoor and Little Moor Farm.
- A network of historic green lanes, most of which have been lost to agricultural intensification and PRoW through the field systems.
- Scattered listed farm buildings, some of which with local vernacular architecture of dark weatherboard and red pantiles, contribute to the sense of place.
- There are several ancient farms with 'Hall' or 'Manor' in their names, including Friston Hall and Manor Farm. Friston House is a Grade II listed building set in mature woodland on the northern edge of the village.
- There are large-scale modern agricultural buildings in the local landscape, particularly those a Redhouse Farm.
- Gently undulating landform, formed by relatively flat fields to the west of Grove Road/north of Friston, which rises gradually to the north towards Fristonmoor.
- Some variety in visual experience, from more open areas around Fristonmoor with views south to Friston, compared to more enclosed areas in and around the edges of Friston and parts of Grove Road, where strong hedgerows and mature woodland provides visual containment.
- Woodland, roadside trees, hedges and field boundary vegetation are often present and form a notable component of the tree cover.
- Woodland blocks are also present and numerous. In particular the ancient woodland at Grove Wood (and the adjoining Laurel Covert) provides a distinctive wooded backdrop in the setting of Friston and the surrounding agricultural fields.
- Double row of overhead pylons and electrical lines crosses the landscape between the village of Friston and Fristonmoor, form notable visual elements in the local setting and due to their larger vertical scale and form tend to distort the sense of scale in the landscape.
- The boundary of Ancient Estate Claylands and Estate Sandlands to the north of Friston is not definitive but suggests a transition in character.

3.2.1.2 Historic Context

38. The historic landscape context around the onshore substation is illustrated ***Figure 1***, showing the 1st edition historic OS map (1883/84) overlaid onto current aerial imagery. The historic landscape featured more hedges defining smaller field enclosures and tree lined field edges. There were also large blocks of woodland present, which remain today. Historic hedgerow field boundaries have been lost over time to agricultural intensification, while other field boundaries

have endured, as shown in ***Figure 1***. In the past, historic farms would have been experienced as part of an open agricultural landscape, but with more hedgerow cover, field trees, tree lined enclosures and woodland blocks. Large blocks of trees are a feature of the historic landscape, including those at 'The Grove' (Grove Wood), Laurel Covert and around Friston House, together with smaller 'covert' woodland blocks.

3.2.1.3 Landscape Elements

39. Within the Ancient Estate Claylands there are several notable landscape elements around the substation site. The main landscape elements in the area around the onshore substation are shown in ***Figure 2***. The local landscape around the onshore substation and National Grid infrastructure benefits from a network of existing hedgerows and substantial woodland blocks. In particular, there is a large area of ancient woodland at Grove Wood, to the south of Grove Road. Woodland at Laurel Covert extends to the west of Grove Road.

40. The extent and height of this mature woodland at Grove Wood / Laurel Covert will provide mitigation of landscape and visual effects from the outset. In particular, this woodland will provide substantial screening of the onshore substation and National Grid substation particularly in views from the east (Knodishall area), north (Knodishall Hall / Saxmundham Road) and south (Snape Road/PRoW between Knodishall and Friston). Grove Wood and Laurel Covert combine to provide a distinctly wooded backdrop to the north of Friston.

41. There is also a large area of mixed woodland around Friston House, which extends the wooded backdrop and provides enclosure to views north from parts of Friston.

42. Small woodland blocks can be found to the north and north-west, with blocks of trees forming a feature of the existing agricultural landscape. Linear woodlands are often associated with the boundaries around individual farmsteads, particularly those to the north such as Pear Tree Farm, Little Moor Farm and Moor Farm. Tree-lined enclosures are often evident along field boundaries or roadsides.

43. There is a network of mature hedgerow field boundaries and hedgerow trees in the surrounding agricultural fields, however many historic field boundaries have been lost over time with agricultural intensification. A network of smaller scale fields with hedgerow boundaries has survived in the area immediately north of Friston (immediately north of Church Road) and provides the immediate setting to the north of the village. Further north, hedgerow field boundaries have often been lost to a relatively open farmed landscape with large scale arable agricultural fields.

44. The existing National Grid overhead line, formed by a double row of electrical pylons, has a notable visual influence in the existing setting, forming part of the backdrop to the village of Friston and a feature in views from individual farmsteads.

3.2.1.4 Visual Receptors and Views

45. The visual receptors most susceptible to visual effects arising as a result of the onshore infrastructure, occur within the LVIA study area and in particular, in the vicinity of the onshore substation and National Grid infrastructure, as shown in ***Figure 2***. They include people within settlements, particularly the village of Friston; local farmsteads such as Fristonmoor, Moor Farm, Little Moor Farm and Fareacres; people driving on the local roads such as Grove Road and the Saxmundham-Aldeburgh Road and Saxmundham-Leiston Road, and people engaged in informal recreational activities such as walking on the local PRoW network and road cycling. Representative viewpoints assessed in the LVIA and the cultural heritage settings assessment are also shown in ***Figure 2***.

3.2.1.5 Landscape and Visual Impacts

46. The operational effects of the onshore infrastructure primarily occur as a result of the operation of the onshore substation and National Grid substation, where significant effects on local landscape character and visual amenity/views occur within an area of approximately 1km from the onshore substation and National Grid substation within the localised Friston area of the Ancient Estate Claylands and Estate Sandlands landscapes.

47. There are notable opportunities for deliverable and effective mitigation of the landscape and visual impacts of the onshore substation and National Grid infrastructure on this localised area in the form of new woodland, hedgerow and tree planting, as proposed in the OLMP (***Figures 3-6***), which have been carefully designed to be appropriate in the local landscape context, taking account of the potential impact on the landscape and the opportunities to minimising harm through reasonable mitigation.

3.3 OLMP Design Principles

3.3.1 National Design Policies

48. Existing policy set out within the Overarching National Policy Statement for Energy (NPS-EN-1) makes clear for the requirements of good design in energy projects. The Planning Inspectorate is to be satisfied that "*developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.*"

49. Function and aesthetics are equally as important and opportunities can be created in terms of good design by considering micrositing relative to landscape, landform and vegetation.

50. EN-1 NPS also states that "*Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.*"

51. *EN-3 NPS for Renewable Energy Infrastructure states that "Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology."*

52. The mitigation 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 on site and connect externally 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.

3.3.2 Local Design Policies

3.3.2.1 Suffolk Landscape Character Assessment

53. The Suffolk Landscape Character Assessment provides development management guidance for each different LCT within Suffolk. Guidance is provided for the Ancient Estate Claylands, within which the onshore substation and National Grid substation are located. Although this guidance is set out for different types of development in the Suffolk countryside, the following design guidance is considered broadly applicable to this OLMP:

- The use of locally appropriate hedging species including hawthorn (*Crataegus*), field maple, dogwood (*Cornus*) and other typical clayland species should be specified.
- Opportunities should also be taken to design a field layout that is in keeping with the local field pattern or the historic pattern of boundaries.
- The release of land for development should, if at all possible, reflect the local pattern.
- The right choice of siting, form, orientation and colour of these buildings can make a considerable contribution to mitigating their impact. There are also

opportunities to design locally appropriate planting schemes to reduce the visual impact further.

- In addition to new planting to mitigate the impact of a development, the option to modify the management of existing hedgerows should also be explored. There are often significant opportunities to retain these boundary features at a specific height.
- The location of the development in relation to existing trees that act either as screening or as a backdrop should be carefully considered.
- New planting should be designed to integrate the development into the character of this landscape and may consist of both backdrop and screening planting. Although there should be a preference for native tree species other options should not be overlooked, especially if they can act as nurse trees, or are likely to prove successful in difficult conditions.
- A master-plan approach is the most effective way to implement strategic planting schemes to mitigate the visual impact of long-term growth on the site, rather than dealing with proposals and mitigation on a piecemeal basis.

54. The following land management guidelines are also offered in the Suffolk Landscape Guidance for the Ancient Estate Claylands:

- Reinforce the historic pattern of sinuous field boundaries.
- Recognise localised areas of late enclosure hedges when restoring and planting hedgerows.
- Maintain and restore greens and commons.
- Maintain and increase the stock of hedgerow trees.
- Maintain the extent, and improve the condition, of woodland cover with effective management.
- Maintain and restore the stock of moats and ponds in this landscape.

55. The Suffolk Coastal Landscape Assessment (2018) provides the following landscape management guidance for the Heveningham and Knodishall Estate Claylands LCT (L1) in which the onshore substation is located:

- Plan for the ongoing maintenance and careful management of the highly characteristic oak trees along hedges, verges and field boundaries.
- Manage areas of semi-natural woodland through appropriate woodland management schemes.
- Manage hedgerows to retain and restore the pattern of network of field boundaries.

- Plan for enhancements to biodiversity in this highly agricultural landscape, perhaps opportunities that might emerge through agri-environmental schemes.

3.3.2.2 Suffolk Coastal Local Plan

56. Key issues which the Suffolk Coastal Local Plan (Final Draft, January 2019) seeks to address include:

- Managing development while protecting significant areas of environmental protection.
- Delivering high quality design that respects local character.

57. Policy SCLP11.1 Design Quality specifically addresses matters of design quality:

58. *The Council will support locally distinctive and high-quality design that clearly demonstrates an understanding of the key features of local character and seeks to enhance these features through innovative and creative means. In so doing, permission will be granted where proposals:*

a. *Support inclusive design environments which are legible, distinctive, accessible, comfortable, and safe, and adopt the principles of dementia friendly design;*

b. *Demonstrate a clear understanding of the character of the built, historic and natural environment and use this understanding to complement local character and distinctiveness through both robust evidence, informed sources and site-specific context and analysis;*

c. *Respond to local context and the form of surrounding buildings in relation to the following criteria:*

i. *the overall scale and character should clearly demonstrate consideration of the component parts of the buildings and the development as a whole in relation to its surroundings;*

ii. *the layout should fit in well with the existing neighbourhood layout and respond to the ways people and vehicles move around both internal and external to existing and proposed buildings;*

iii. *the height and massing of developments should be well related to that of their surroundings;*

iv. *the relationship between buildings and spaces and the wider street scene or townscape; and*

v. *by making use of high-quality materials appropriate to the local context;*

d. *Take account of any important landscape or topographical features and retain and/or enhance existing landscaping and natural and semi-natural features on site;*

e. *Protect the amenity of the wider environment, neighbouring uses and provide a good standard of amenity for future occupiers of the proposed development;*

f. *Take into account the need to promote public safety and deter crime and disorder through well-lit neighbourhoods and development of public spaces that are overlooked;*

g. *Create permeable and legible developments which are easily accessed, throughout the site and connections outside the site, and used by all, regardless of age, mobility and disability;*

h. *Provide highway layouts with well-integrated car parking and landscaping which create a high-quality public realm, avoiding the perception of a car dominated environment, and that encourage and the use of pedestrian, cycle and other sustainable modes as the most attractive modes of sustainable travel;*

i. *Include hard and soft landscaping schemes to aid the integration of the development into its surroundings;* and

j. *Ensure that the layout and design incorporates adequate provision for the storage and collection of waste and recycling bins in a way which does not detract from the appearance of the development.*

3.4 Consultation

3.4.1 Technical Working Group Consultation

59. The Local Planning Authority, Natural England and Historic England have provided comments on the OLMP presented within the Preliminary Environmental Information Report (PEIR) (SPR 2019) via a series of technical working group meetings in addition to the LVIA Expert Topic Group (ETG) consultation. These comments allowed the further refinement of the OLMP presented in this report and have been incorporated within the outline design principles in ***section 3.3***.

60. Matters in which technical working group have provided comment to ensure that the Applicant have done as much as possible to mitigate the impacts of the development include, but are not necessarily exclusive to:

- Landscape issues (including making land available for public benefit);
- Reducing the land take of the NGET substation;
- Transport and access to the onshore infrastructure from the public highway;
- Net ecological gain;
- Flood alleviation with the possibility of net gain to the local area;
- Archaeological and heritage matters including historic field boundaries;
- Socio-economic issues; and
- PRoW.

61. The LVIA ETG and technical working group has been engaged on a regular basis to discuss and agree the arrangement, layout, reinstatement of the historic landscape, PRoW permanent diversions, planting specification, planting species and growth rates of the OLMP for the proposed East Anglia TWO project. ***Table 3.1*** provides a summary of the meetings and discussions.

Table 3.1 Summary of Engagement with OLMP Technical Working Group (in addition to LVIA ETG) Regarding Definition of the Outline Landscape Mitigation Plan

Date	Who with	Discussions
24th January 2019	Historic England Suffolk County Council Suffolk Coastal and Waveney District Council[2]	Cultural heritage considerations
22nd February 2019	Suffolk County Council Suffolk Coastal and Waveney District Council	National Grid infrastructure update Substation drainage update Landscape design strategy PRoW strategy
3rd April 2019	Suffolk County Council East Suffolk Council	National Grid infrastructure update Landscape design strategy update PRoW strategy update Tree species and growth rates Ecological considerations

[2] Note that on 1st April 2019, East Suffolk Council was created, covering the former districts of Suffolk Coastal District Council and Waveney District Council

Date	Who with	Discussions
		Offsite planting strategy
23rd May 2019	Natural England Historic England Suffolk County Council East Suffolk Council Suffolk Preservation Society	Landscape design strategy update PRoW strategy update Tree species and growth rates update Ecological considerations update

62. Detailed comments were provided by the OLMP technical working group and LVIA ETG during consultations and are summarised as follows:

- Planting proposals including the layout and pattern need to be reflective of prevailing surrounding landscape pattern. It is also important that the choice of planting reflects the prevailing landscape character and growing conditions.
- The planting and landscaping proposals should take account of underground connections to the National Grid substation and other constraints such as overhead lines, archaeology, drainage routes etc.
- The levels across the site need to be fully understood in order to understand the effectiveness of planting proposals as screening.
- The OLMP should be designed in order to accommodate any future development of the National Grid substation to accommodate future projects, without modification to the final LMP, such as the removal of planting provided by the proposed East Anglia TWO project.
- It is important that the OLMP delivers more than just planting with a sole screening function. The site is surrounded by public footpaths, hosts wildlife and is currently enjoyed by the surrounding communities and therefore the masterplan should deliver significant gains for biodiversity and public amenity.
- The OLMP should identify the end use of the land, whether it is retained with the development or returned to agricultural use, as this is important information which will assist in the understanding of the masterplan.
- The historic landscape of the area needs to be taken into consideration. In area to the immediate north of Friston, the reinstatement of historic field boundaries, filling gaps in existing hedgerows and introducing field boundary trees is likely to be preferable, to provide layered screening, rather than large-scale woodland planting close to the village. This would allow the ‘setting’ of Friston to be retained (rather than being contained by woodland). In other areas, there may be potential for establishment of larger woodland blocks akin to the existing pattern of woodland blocks in the landscape.

- In relation to individual farmsteads, removing the "farming context" with woodland planting close to farms to screen the substations could be potentially damaging to the setting. The preference would be for planting not to enclose the historic farms in woodland, as this is not how they would have been experienced in the past. The re-establishment of historically mapped tree-lined enclosures close to the farms would be preferable, to retain farms in an open farmed landscape whilst achieving screening through multiple lines of planting.

3.4.2 Stakeholder Consultations

63. A summary of stakeholder feedback on the LVIA and OLMP presented in the PEIR during Section 42 consultation is contained in ***Appendix 29.1 of Chapter 29 Landscape and Visual Impact Assessment*** of the ES.

3.5 Substation OLMP Proposals

3.5.1 General Overview

64. The location, shape and internal arrangement of the onshore substation and National Grid substation are defined by strict technical constraints and health and safety requirements. The OLMP proposals focus on the land surrounding the onshore substation and National Grid substation and how their landscape and visual impacts may be mitigated and contained within the surrounding landscape.

65. During development of the OLMP, three approaches to the landscape design were considered – 'hidden', 'integrated' and 'exposed'. These options are illustrated and described in ***Plate 3.1***.

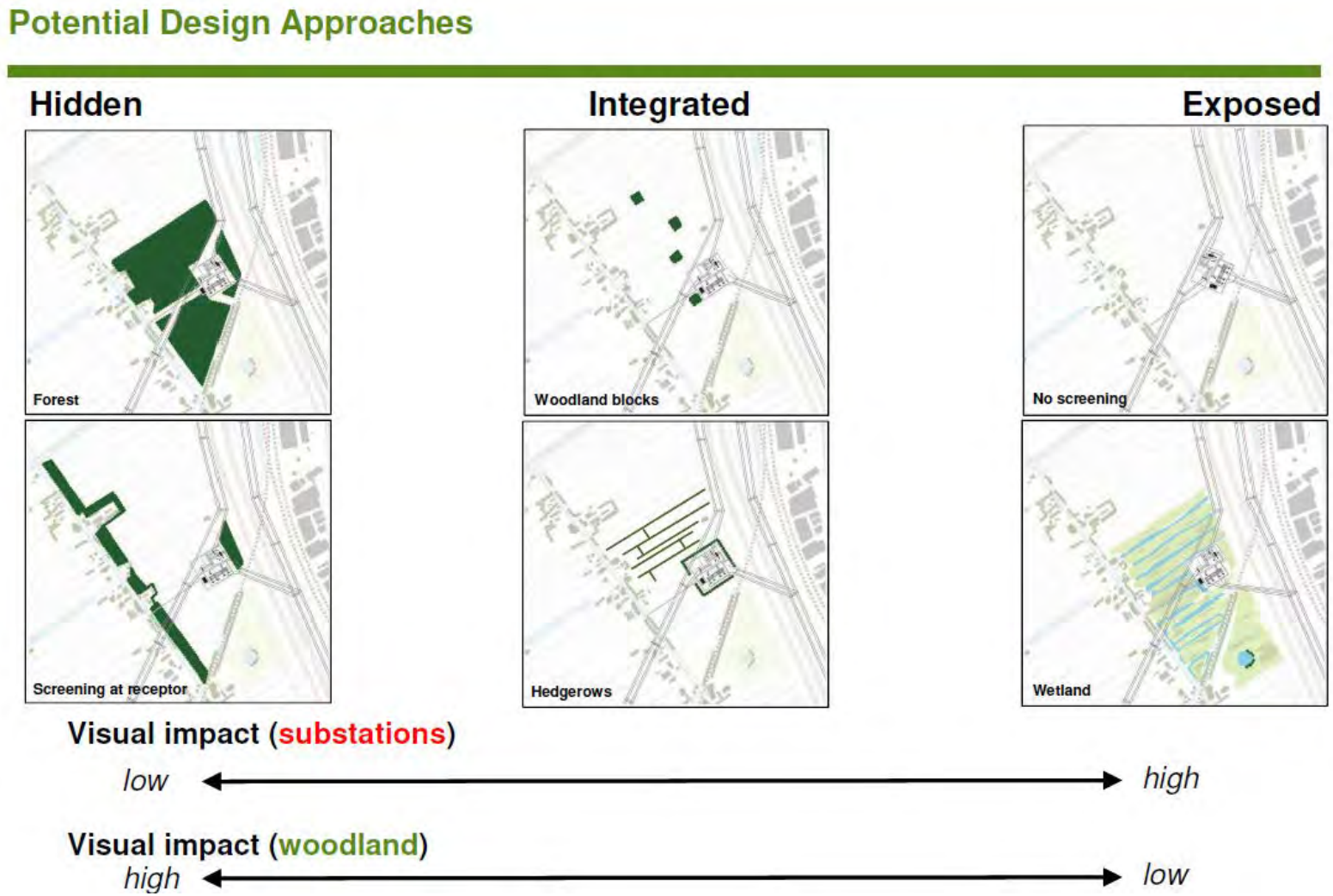


Plate 3.1 Potential Design Approaches

- The **'hidden approach'** - focuses on reducing the impact of infrastructure on the existing space. The hidden approach has extensive landscape screening to hide the infrastructure, which limits the recognisability of the function of the infrastructure and has a lower change on the rural character. However, the scale of the infrastructure is often hard to completely hide with woodland planting. Existing infrastructure such as power lines and pylons are also likely to remain clearly visible in the landscape. The hidden approach can be achieved with vegetation/woodland planting all around the infrastructure, or on the side of the main observers.
- The **'integrated approach'** - focuses on reducing the impact of infrastructure on the existing space, without completely hiding the infrastructure. The strength of this approach is to use the existing landscape structure to embed the infrastructure, and still show its function. The integrated approach has some landscape screening, but expands existing electrical characteristics, enabling the observer to understand the function of the infrastructure, with a more moderate change to the rural character. The integrated approach can be achieved using woodland clumps/shelterbelts and/or hedgerows.
- The **'exposed approach'** - focuses less on the spatial impact and more on the recognisability of the function. The exposed approach has limited/no landscape screening, with high recognisability of the function of the infrastructure, but also a high change to the rural character. The exposed approach concentrates on emphasising the infrastructure e.g. through new architectural elements/installations, combined with specifically coloured elements, or emphasis through planting and management of vegetation in a specific form.

66. The landscape design approach selected for the onshore substation and National Grid substation combines the approaches of hiding and integrating them into the landscape to meet the mitigation requirements and also as a response to the local landscape character and the historic landscape context. This approach results in the onshore substations having a lower landscape and visual impact in the long-term, once woodland and hedgerow planting is maturing (as opposed to an approach where the substations are even more emphasised). Specifically placed woodland blocks/shelterbelts, hedgerows and tree lined field edges are proposed to hide and integrate the onshore substation, reducing the visual impact in specific views towards the onshore substation experienced by people from residences, roads and PRoW, while allowing the function of the onshore substations to be recognised when in closer proximity.

67. This approach acknowledges the key requirement for visual screening of the onshore substations, which has been a clear preference expressed during public

and stakeholder consultations. Due to technical constraints, it would be unrealistic to completely screen the entirety of the onshore substations, therefore some element of integration is required and is considered suitable to allow some recognisability of the function of the onshore substations, when viewed in the context of the existing electrical transmission infrastructure nearby.

3.5.2 OLMP – Description of Landscape Mitigation Proposals

68. There are notable opportunities for deliverable and effective mitigation of the landscape and visual impacts of the onshore substation and National Grid substation, in the form of new landscape planting in the OLMP. The OLMP is presented in ***Figure 3 - 7*** and comprises areas of substantial native woodland planting near the onshore substation and National Grid substation, set back from the main visual receptors (such as Friston) to provide screening, while also retaining the open rural setting; supplemented by smaller characteristic woodland blocks, new hedgerow planting along historic hedgerow field boundaries and individual field boundary tree line planting, to provide a layered screening approach. The OLMP has been carefully designed to be appropriate in the local landscape context, taking account of the potential impact on the landscape and the opportunities to minimising harm through reasonable mitigation.

69. Woodland blocks to the south of the onshore substation and National Grid substation are intended to provide screening for the main 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. 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 receptors along the Saxmundham Road, and from road-users of Saxmundham Road.

70. The OLMP is presented in ***Figures 3 – 7***. ***Figure 3*** shows the landscape general arrangement of the woodland, hedgerow and tree planting proposed, including the different types of native woodland areas. ***Figure 4*** and ***Figure 5*** provide an illustrative landscape plan, graphically designed to show what an aerial image of the site might look like in the future when the landscape planting proposals are maturing. ***Figure 6*** is also presented on an aerial image, but highlights just the proposed woodland and hedgerows, so that they can be distinguished (in colour) from existing areas of woodland and hedgerows (in greyscale). ***Figure 7*** identifies the proposed timing of the proposed planting, including pre-construction (but post-consent) planting and planting proposed towards the end of or after the onshore substation construction period.

71. ***Figure 9*** shows the landscape general arrangement of the woodland, hedgerow and tree planting proposed, including different types of native woodland areas, with a National Grid GIS substation. This illustrates that the OLMP presented in ***Figures 3 – 7*** retains flexibility to accommodate the National Grid GIS substation footprint.

72. The OLMP proposals seek to be historically appropriate, through proposals to re-establish lost field boundaries and seek to achieve screening through multiple lines of planting, with a mix of blocks, belts, tree lines and hedges.

73. The screening tree belts are not placed hard against the houses, footpaths and villages. On the paths, this creates an experience of walking through farmland that includes woodland and the onshore substations, rather than always walking past woodland. At the houses, the planting has avoided enclosure of the historic farms in woodland, which is not how they would have been experienced in the past (this applies particularly to the listed buildings on Friston Moor). The OLMP includes re-establishment of historically mapped tree-lined enclosures close to the farms to achieve screening whilst retaining the farms in a more open farmed landscape.

74. In the area to the north of Friston, there are proposals to re-establish lost historic field boundaries and to seek to achieve screening through multiple lines of planting rather than woodland blocks. Blocks of trees are a feature of the existing landscape and at least one was added in the late 19th century so more woodland is not inappropriate. However, the proposal includes a mix of blocks, belts, tree lines and hedges to be historically more appropriate, while providing visual screening in views from Friston.

75. The design approach in the OLMP therefore combines areas of woodland planting, hedgerow planting and individual tree planting, to provide a layered screening approach. Each of these elements of the OLMP are described further as follows, with reference to ***Figures 3 – 7***.

3.5.3 Woodland Planting

76. There are notable opportunities to deliver effective mitigation of the landscape and visual impacts of the onshore substation and National Grid infrastructure through new woodland planting. The extent of mitigation planting incorporated into the design is presented in ***Figures 3 - 7*** and comprises native woodland species, developed in consultation with the technical working group, planted around the onshore substation and National Grid infrastructure.

77. A newly planted woodland framework will be established around the onshore substation, with the key element being a substantial belt of woodland linking

Grove Wood and Friston House, proposed with the intention of 'separating' the site from Friston and Grove Road. This woodland belt is located north of Friston away from the immediate vicinity of Friston, so as not to significantly impact on the setting of Friston and retain the open rural setting of the village, while also providing screening of the onshore substation and National Grid substation.

78. The landscape mitigation plan proposes four types of woodland planting, as shown in ***Figure 3*** (and ***Figure 9*** for the National Grid GIS substation), consisting of a core native woodland, native edge woodland, native screening woodland and native wet woodland. These types of woodland planting are summarised as follows:

- Core native woodland (W1) – consisting of native trees species including oak, birch (*Betula*), lime, alder, maple, beech (*Fagus*), rowan and alder, planted within the central part of woodland planting areas, forming core woodland. Mix of native species, typical to the area and is intended to provide long-term screening as well as providing habitat and biodiversity.
- Native edge woodland (W2) – consisting of smaller native trees and shrubs, such as hawthorn, elder (*Sambucus*), hazel (*Corylus*), dogwood and blackthorn (*Prunus spinosa*) to form graduated edges around woodland planted areas.
- Native screening woodland (W3) – consisting of quicker growing native species and a small proportion of evergreens to provide some year-round screening, including alder (*Alnus*), rowan (*Srobus*), silver birch (*Betula pendula*), black poplar (*Populus nigra*) and scots pine (*Pinus sylvestris*). These are generally faster growing species and the intention is for this mix to provide earlier visual screening and also to act as a "nursery crop" for the core woodland species.
- Native wet woodland (W4) – small area of wet woodland around the SDS, planted in soils likely to be in wetter ground, including alder, willow (*Salix*), birch, common osier (*Salix viminalis*) and elder. The tree species chosen are able to withstand wetter ground conditions.

79. The species mixes for these areas of woodland are shown in ***Table 3.2*** to ***Table 3.5***.

Table 3.2 Core Native Woodland Species Mix (W1)

Common Name	Botanical Name	Proposed Mix %
Common Oak	*Quercus robur*	15
Downy Birch	*Betula pubescens*	15
Small-leaved Lime	*Tilia cordata*	10
Field Maple	*Acer campestre*	10
Common Beech	*Fagus slyvatica*	10
Rowan	*Sorbus aucuparia*	10
Common Alder	*Alnus glutinosa*	10
Bird Cherry	*Prunus padus*	10
Common Holly	*Ilex aquifolium*	5
Common Privet	*Ligustrum vulgare*	5

Table 3.3 Native Edge Woodland Mix (W2)

Common Name	Botanical Name	Proposed Mix %
Common Hawthorn	*Crataegus monogyna*	20
Common Dogwood	*Cornus sanguinea*	10
Common Hazel	*Corylus avellana*	10
Common Crab Apple	*Malus sylvestris*	10
Blackthorn	*Prunus spinosa*	10
Goat Willow	*Salix caprea*	10
Common Elder	*Sambucus nigra*	10
Guelder Rose	*Viburnum opulus*	10
Common Spindle Tree	*Euonymus europaeus*	5
Common Holly	*Ilex aquifolium*	5

Table 3.4 Native Screening Woodland Species Mix (W3)

Common Name	Botanical Name	Proposed Mix %
Common Alder	*Alnus Glutinosa*	15
Rowan	*Sorbus Aucuparia*	15
Downy Birch	*Betula pubescens*	10
Black Poplar	*Populus Nigra*	10
Silver Birch	*Betula pendula*	10

Common Name	Botanical Name	Proposed Mix %
Scots Pine	*Pinus sylvestris*	10
Field Maple	*Acer campestre*	10
Alder Buckthorn	*Rhamnus frangula*	8
Guelder Rose	*Viburnum opulus*	6
Common Privet	*Ligustrum vulgare*	6

Table 3.5 Native Wet Woodland Species Mix (W4)

Common Name	Botanical Name	Proposed Mix %
Common Alder	*Alnus glutinosa*	20
Crack Willow	*Salix Fragilis*	15
White Willow	*Salix alba*	15
Common Oak	*Quercus robur*	15
Downy Birch	*Betula pubescens*	15
Common Osier	*Salix viminalis*	5
Elder	*Sambucus nigra*	5
Blackthorn	*Prunus spinosa*	5
Common Hawthorn	*Crataegus monogyna*	5

3.5.4 Assumed Growth Rates

80. The appearance of the onshore substation and National Grid infrastructure will be influenced by the establishment and growth of these areas of woodland planting over time. Recently planted cell-grown trees and hedgerows are likely to have limited screening effect when not fully established. Photomontage visualisations in ***Figures 29.13 – 29.26*** of the ***Chapter 29 Landscape and Visual Impact Assessment*** show the predicted view of the onshore substations and National Grid infrastructure with recently planted trees, in the first year of planting as the 'without mitigation' scenario.

81. In the early years of growth, young trees will be establishing, and are assumed to have good vigour, but likely to have limited screening effects in the landscape. Woodland planted areas are assumed to be well established between 5 to 10 years post-planting, with young trees growing in height, having increasing landscape significance and providing some screening of the onshore substations. Between 10 to 15 years post-planting, fully established trees are assumed to be generally retaining good vigour and starting to achieve good height with tree

crowns spreading and are assumed to provide notable screening of the onshore substations and National Grid infrastructure.

82. At 15 years post-planting, trees within the proposed woodland planting areas (Figure 29.11a) are assumed to be within the following height ranges:

- Core native woodland (W1). Taller trees assumed to have heights between 6.5m – 7.8m and smaller trees/shrubs are assumed to have heights of 2m – 4m to form an understorey.
- Native edge woodland (W2). Trees assumed to have heights between 2m – 5m.
- Native screening woodland (W3). Taller trees assumed to have heights between 6.5m – 8.4m and smaller trees/shrubs are assumed to have heights of 2m – 4m to form an understorey
- Native wet woodland (W4). Taller trees assumed to have heights between 6.5m – 7.8m and smaller trees/shrubs are assumed to have heights of 2m – 4m to form an understorey.

83. These tree heights are assumed for the 'with mitigation' impact assessments in the LVIA (at 15 years post-planting) and are shown in the Year 15 'with mitigation' photomontages in ***Figures 29.13 – 29.26*** of the LVIA. These photomontages are produced using a 3D model which accurately shows the height and extent of woodland areas. A range of tree heights within the upper and lower height ranges are shown in the photomontages and are assumed for the 'with mitigation' impact assessments in the LVIA. This provides for a representation of likely differences in growth and a more realistic appearance of the woodland areas in the photomontages, than if the trees are all shown at the same height. Trees at the upper end of the height range, for example 7.8m for core woodland, are only applied for a minority proportion of the overall mix as represented in the photomontages, with a range of tree heights shown to represent the range of likely growth of different trees within the planting mixes proposed.

84. Heights of taller trees (W1, W3, W4) at 15 years post-planting are based on an assumption of planting 60cm cell-grown plants, with an average annual growth rate of 30cm per year for the first 5 years and 50cm per year for the next 10 years, based on relevant guidance (IEMA, 2019), research of relevant published literature (Skinner, 1987) and plant nurseries, and are comparable to precedents established by other NSIP projects. To achieve these annual growth rates it is assumed that the fundamental principles of good nursery stock, proper ground preparation and an embedded best practice maintenance regime would be delivered as part of the planting specification. A variation tolerance of +10% to -10% has been applied to allow for some variation in growth, above and below the

average, and to provide differences in canopy height in the photomontage visualisations.

3.5.5 Timing of Woodland Planting

85. During the onshore site preparation works, pre-construction woodland and hedgerow planting will be implemented in locations where it is possible to achieve advanced planting outside the immediate onshore substation and National Grid infrastructure construction areas. Areas of pre-construction planting and re-instatement of gappy hedgerows shown in ***Figure 7*** will be implemented as early as possible, post-consent, in order to establish plants and provide for screening. This would mean these areas would already have had approximately three years of growth prior to completion of construction and commencement of operation.

86. Pre-construction planting will take place to the south of the onshore substation and to the north of Friston, consisting of the planting of woodland and planting in gappy hedgerows. Pre-construction planting will also take place to the north of the National Grid substation in the areas near Fristonmoor and Little Moor Farm; to begin establishment of hedgerows as early as possible.

87. Post-construction planting will focus on the large woodland belts that surround the onshore substation and National Grid substation, as well as formalising the woodland planting around the SuDS basins, which will require to be planted towards the end of the construction period.

88. Further establishment of hedgerows (that were not strengthened during the pre-construction planting phase) will take place along the permanent substation access road and around the perimeters of the National Grid infrastructure.

3.5.6 Individual Tree Planting (T1)

89. 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.

Table 3.6 Individual Tree Planting (T1)

Common Name	Botanical Name
Common Oak	*Quercus robur*
Small-leaved Lime	*Tilia cordata*
Field Maple	*Acer campestre*

3.5.7 Hedgerow Planting (H1) and Reinstatement (H2)

90. In addition to areas of new woodland planting, the OLMP includes substantial lengths of new native hedgerow planting and the reinstatement of existing gappy hedgerows around the onshore substations, shown in ***Figures 3 - 7***. Historic hedgerow field boundaries have been lost, over time, to agricultural intensification. The landscape used to feature more hedges and tree lined field edges and there were also large blocks of woodland present, which remain today. The OLMP proposals seek to be historically appropriate, with proposals to re-establish lost field boundaries and seek to achieve screening through multiple lines of planting, with a mix of blocks, belts, tree lines and hedges. The reinstatement of gappy hedges and new field trees are proposed to north of Friston, to give layered screening in views from this village.

91. The proposals focus on reinstatement of historic field boundary hedgerows/tree lines and tree blocks set back from farmhouses in the form of locally characteristic 'Covert' woods, in order to retain, insofar as possible, the open setting of existing farms and villages, while providing additional visual screening in the landscape. Hedgerows will combine with the woodland planting areas to integrate the substations into the landscape, both in terms of providing screening of the onshore infrastructure and as an extension of an element that is characteristic in the local landscape. The arrangement of hedgerows provides connectivity with existing and proposed woodlands and hedgerows in the surrounding landscape.

92. The OLMP (***Figures 3 - 7***) shows the locations of proposed hedgerow planting around the onshore substations. The hedgerows will consist of mixed native species hedge (including hawthorn, maple, hornbeam, holly, privet, and blackthorn) as listed in full in ***Table 3.8***. Native hedgerows will be managed over time to retain and restore the pattern of network of field boundaries.

93. Hedgerows will combine with the woodland planting areas to integrate the substations into the landscape, both in terms of providing screening of the infrastructure and as an extension of an element that is characteristic in the local landscape.

94. The species mixes for the native hedgerow (H1) planting is shown in ***Table 3.7***.

Table 3.7 Native Hedgerow Species Mix (H1)

Common Name	Botanical Name	Proposed Mix %
Common Maple	*Acer campestre*	20
Common Hornbeam	*Carpinus betulus*	5
Common Hazel	*Corylus avellana*	2
Common Hawthorn	*Crataegus monogyna*	55
Common Dogwood	*Cornus sanguinea*	5
Common Privet	*Ligustrum vulgare*	5
Blackthorn	*Prunus spinosa*	2
Common Buckthorn	*Rhamnus catharticus*	2
Dog Rose	*Rosa canina*	2
Holly	*Ilex aquifolium*	2

3.5.8 Grassland

95. Existing agricultural land use will be retained, or land will be returned to agricultural use following the construction period where possible, as illustrated in ***Figure 3*** (and ***Figure 9*** for the National Grid GIS substation).

96. Species rich grassland areas will be established, as shown in ***Figure 3*** (and ***Figure 9*** for the National Grid GIS substation), particularly in the areas immediately around the onshore substation and National Grid substation, 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.

97. The Landscape General Arrangement (***Figure 3*** and ***Figure 9***) shows the locations of all grassland areas that will be established as part of the OLMP. The types of grassland species that will be established are summarised as follows and in all cases, an appropriate seed mix will be selected to assist with the introduction of grass species appropriate to the area and onshore substation site conditions

- 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.

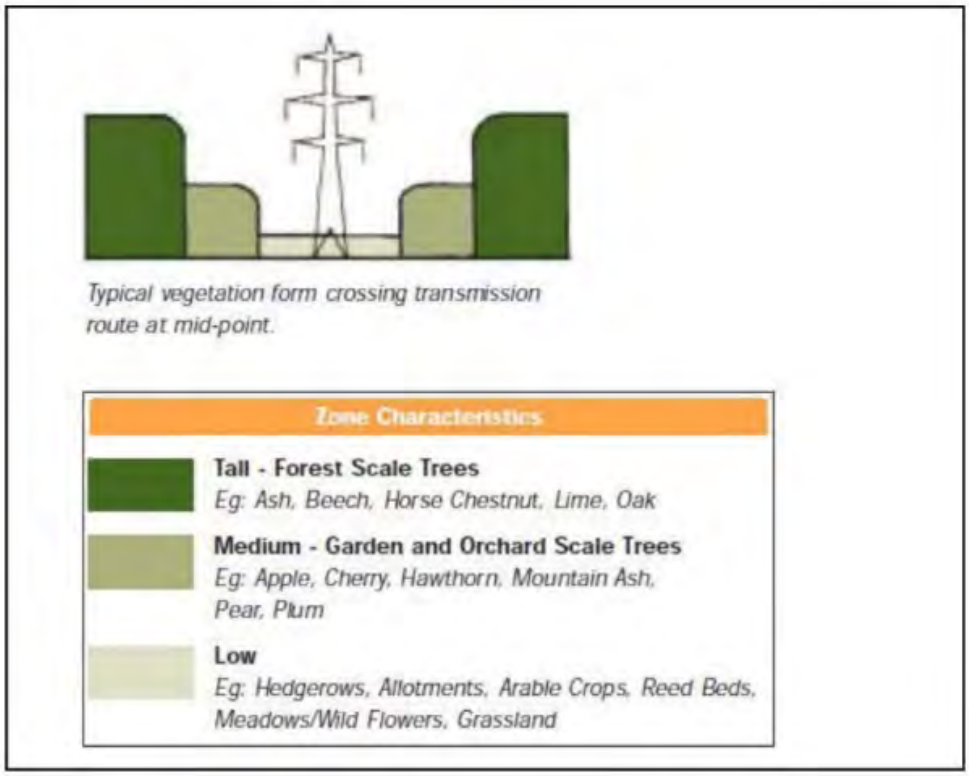
3.5.9 Ecological Features

98. The planting and landscaping proposed within this OLMP are likely to benefit ecological species surrounding the onshore substation and National Grid infrastructure. 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. 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. The wetland habitat provided by the establishment of the SuDS ponds will be beneficial to local wildlife species, for example protected newt species such as great crested newts. 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.

3.5.10 Constraints

99. The planting and landscape proposals shown in the OLMP take account of a number of constraints, including the underground onshore cable route, existing and re-aligned National Grid overhead lines.

100. National Grid have a number of requirements for planting near to overhead transmission lines. Changes in ground levels should not result in safety clearances being infringed, with a 7.3m minimum distance. Planting within 2m of pylon bases should be avoided and only slow growing low height species should be planted beneath overhead line conductors (wires). It is also required that sufficient clearance is maintained between overhead conductors (wires) and trees/vegetation, with a 7.5m minimum distance recommended, shown in ***Plate 3.2*** and ***Plate 3.3***. A precautionary 25m buffer from the overhead lines has been applied for the proposed planting of tall woodland areas in the OLMP.



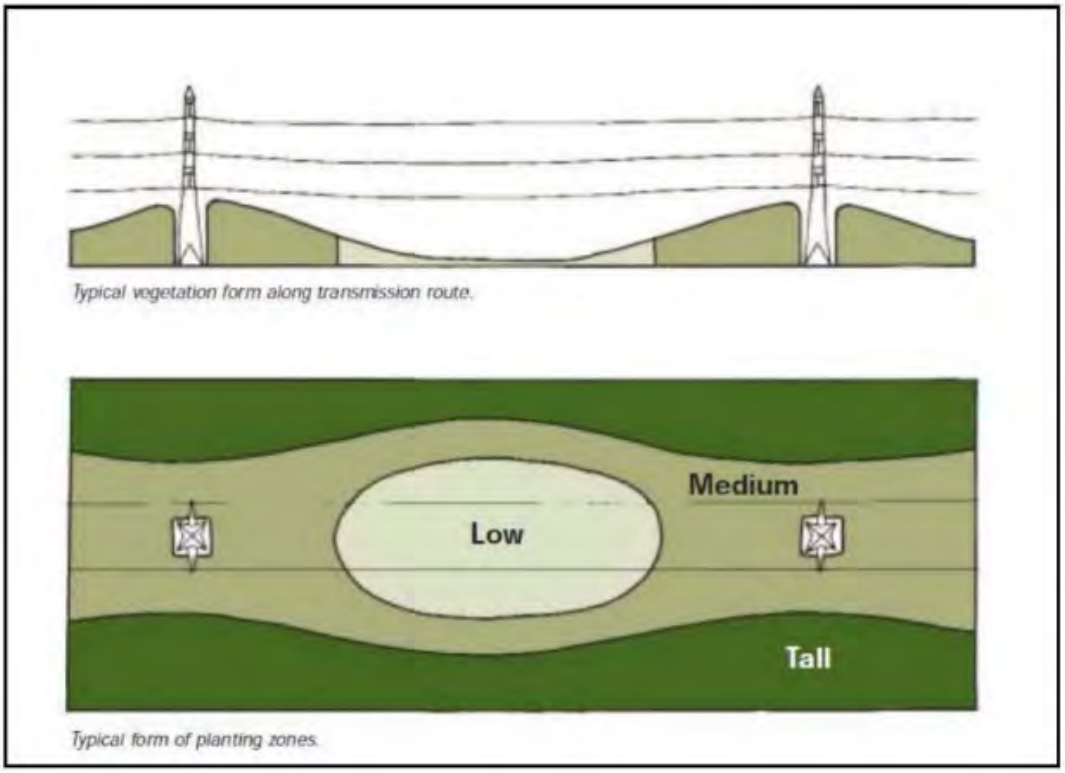


Plate 3.2 Typical form of Planting Areas

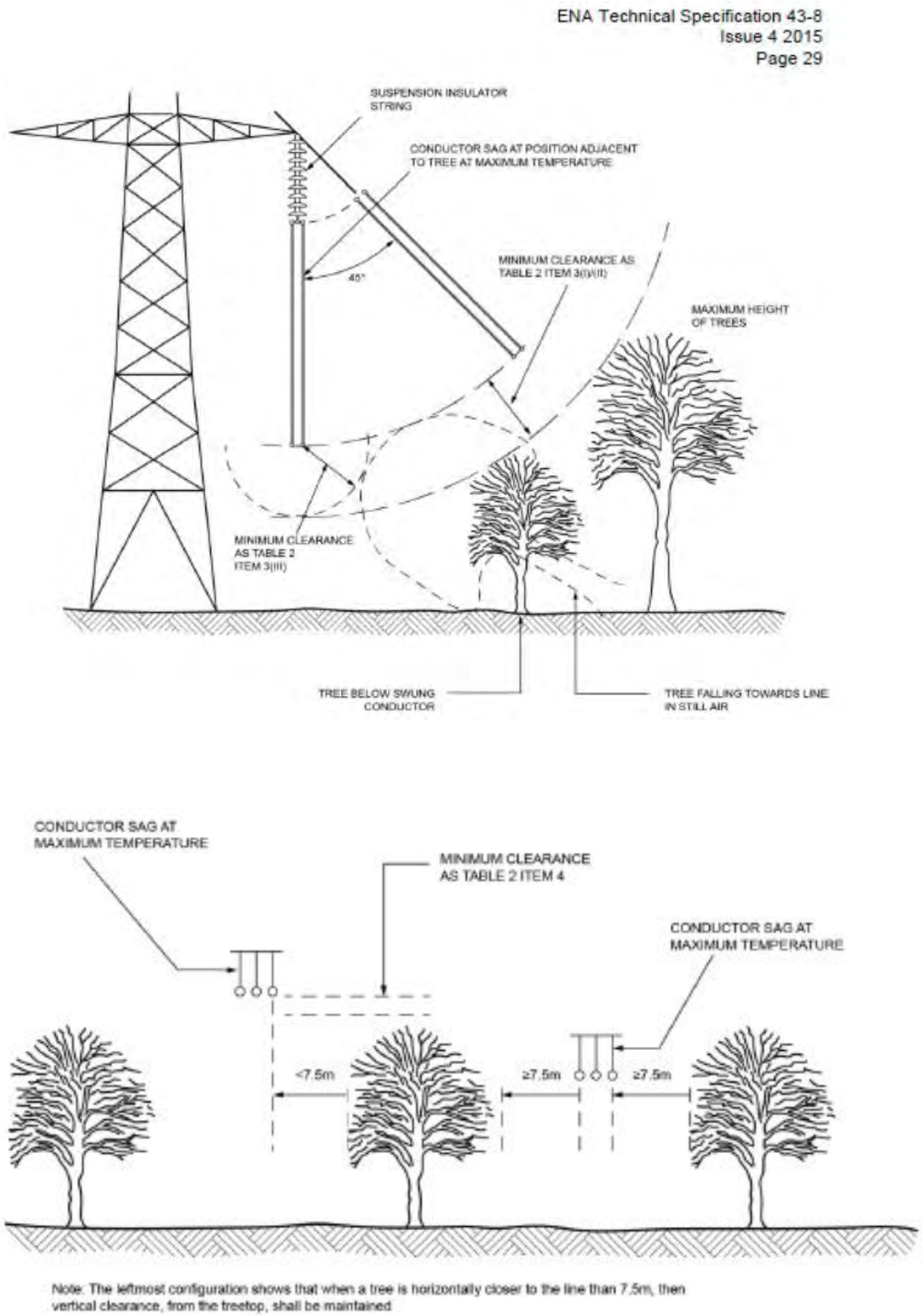


Plate 3.3 Typical Planting Forms

101. In particular, these requirements provide constraints to higher woodland planting to the north of the National Grid substation and around the overhead line realignment works, where planting is required to be lower and slow growing species.

102. Constraints are presented by underground onshore cables coming into the onshore substations (***Figure 3*** and ***Plate 3.4***), however it has been possible to limit this 'gap' with a hedgerow planted across it and planting of shallow rooting species around the edges of the onshore cable route.

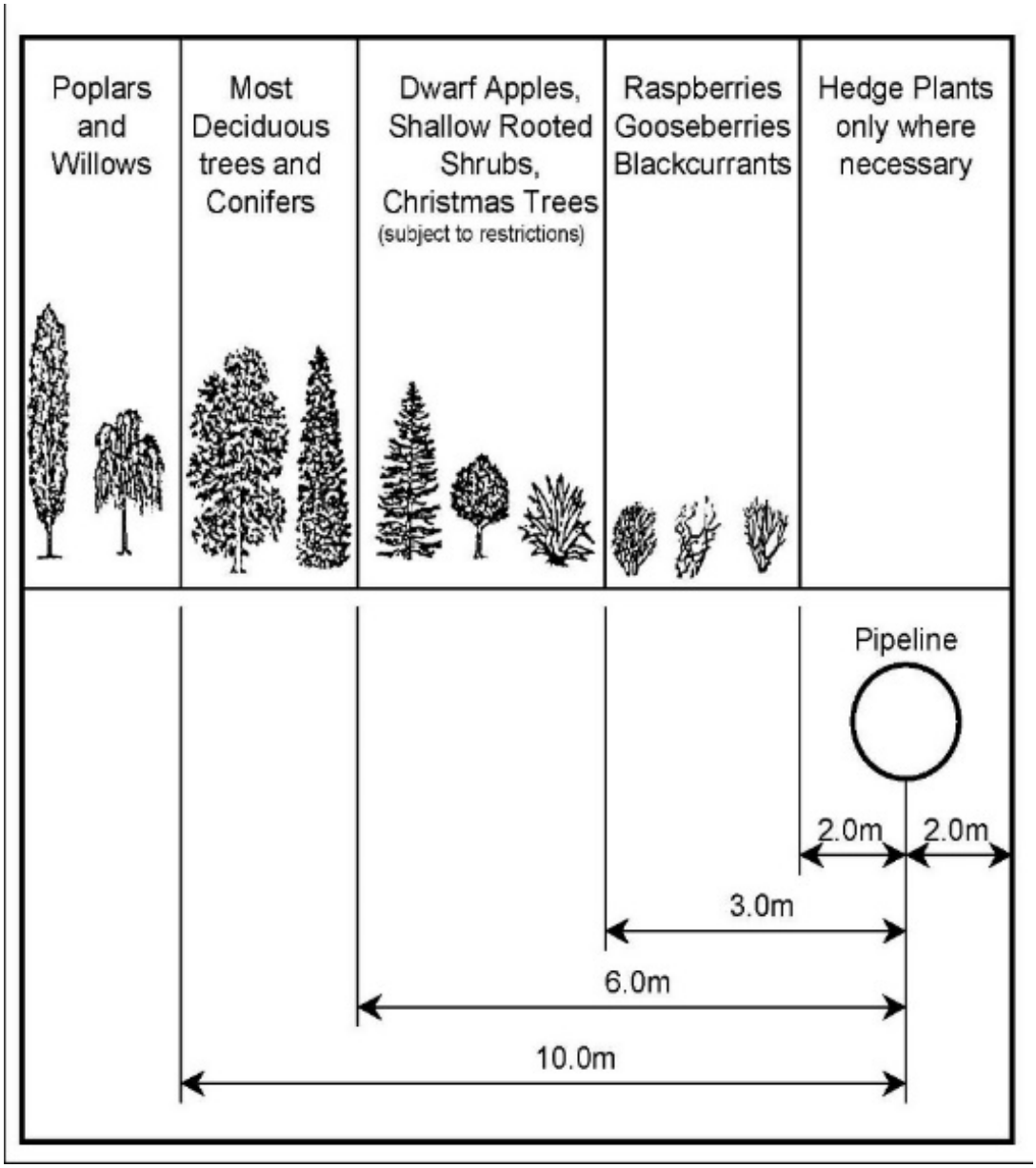


Plate 3.4 Planting Constraints

3.5.11 Substation Site Levels / Earthworks Proposals

103. The height of the onshore substation GIS building will be kept to a maximum of 15m and external electrical infrastructure at the onshore substation will be kept to a maximum of 18m; external electrical infrastructure at the National Grid infrastructure will be kept to a maximum of 16m.

104. Based on preliminary engineering design undertaken, the finished ground level in respect of the onshore substation is anticipated to be approximately 20.7m AOD where the onshore substation is located to the east, and approximately 18.2m AOD where the onshore substation is located to the west. The final finished ground level will be established during detailed design post-consent as per the Outline Substation Design Principles Statement.

105. The current bund proposal associated with onshore substation and National Grid infrastructure SuDS basins and perching of basins in location is identified in ***Figure 5***.

106. The top of the bund will be 1.5m higher than the internal substation level. The intention is to grade the ground up to these levels from the substation at a grade of 1:3. This grade of slope also allows for safe maintenance access. The bund is then shaped so that externally it falls at a gentler grade of 1:10 to 1:20 away from the substation to have a smoothly graded, natural looking slope facing the viewers looking towards the substation.

3.5.12 SuDS

107. 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.

108. The outline design of the onshore substation drainage has inherent benefit to reducing downstream flood risk in the village of Friston. The SuDS basins are designed to contain a 1 in 200-year storm event. The English standard is to design for a 1 in 100-year (+20% for climate change) storm event, so the SuDS basins are larger than required for any potential impact associated with storm event runoff.

109. The outline design of the SuDS basins that serves the onshore substation retains the potential to reduce the outflow rate of the SuDS basin by approximately 20% which would enable the onshore substation drainage strategy to reduce the runoff rate to lower than a 1 in 1-year storm event (signifying a reduction in the runoff associated with a 1 in 200-year storm event, which is the amount of rainfall associated with a very intense, rare storm event, to a runoff rate associated with

a 1 in 1-year storm event, which is the amount of rainfall associated with a less intense, more common storm event).

110. The outline design of the SuDS basin that serves the National Grid substation retains the same potential to reduce the outflow rate of the SuDS basin by approximately 20% which would enable the National Grid drainage strategy to reduce the runoff rate to lower than a 1 in 1-year storm event (signifying a reduction in the runoff associated with a 1 in 100-year storm event (plus an allowance for climate change), which is the amount of rainfall associated with a very intense, rare storm event, to a lower runoff rate associated with a less intense, more common storm event).

111. Current outline design has not allowed for any infiltration in the base of the SuDS basins. Following consent, detailed design will likely allow for some percolation through the base of the SuDS basins which would help reduce the required storage volume and enable greater reductions in flood risk downstream.

112. The Surface Water and Drainage Management Plan will include the design of SuDS incorporating landscaped and planted ponds. Management measures of operational stage surface water drainage will be detailed and secured in the final Landscape Mitigation Plan (LMP).

113. The Applicant has committed to providing an additional 'surface water management SuDS basin' (currently identified as concept within ***Figure 5***) to reduce flood risk for the village of Friston, in addition to the SuDS strategy currently proposed. Confirmation of the size, volume and location of this additional 'surface water management SuDS basin' will follow detailed design of the onshore substation and National Grid substation; following establishment of a catchment hydraulic model and final project parameters.

3.5.13 Public Rights of Way

114. The OLMP seek to deliver gains for public amenity by including enhanced access through PRoW proposals.

115. There are two PRoW (ID number: E-354/006/0 and E-354/007/0) in the location of the onshore substation that will require permanent re-routing. This can be mitigated through implementation of landscaping to develop a number of PRoW options (establishing a network) in the area surrounding the onshore substation. Users of the PRoW network around the onshore substation will be given the option of diverted routes, and therefore retain the option to walk around the area on longer, medium or shorter routes. The existing PRoW, and proposed diversions to these routes, is shown in ***Figure 8***.

116. A short PRoW diversion, a medium PRoW diversion and a longer PRoW diversion are included in the proposals for the permanent diversion of PRoW ID number E3-354/006/0. A short diversion is proposed for short walks, connecting people back into Friston for amenity walks associated with dog walking which is an important recreation and amenity asset for the village. A medium diversion is proposed along a grass headland on the inside of the existing and proposed hedgerow along Grove Road, connecting to the PRoW to the north near Little Moor Farm. A longer PRoW diversion will extend the medium PRoW diversion further west to connect to an existing PRoW. This is seen as the optimum route to take people away from construction works and passing next to the onshore substation and National Grid infrastructure; while retaining some of the open/rural experience and added wooded sections to the route. See ***Figure 8*** for illustrations of the proposed diversions.

117. The permanent diversion of PRoW ID number E-354/007/0 is to ensure PRoW users have the benefit of the existing hedgerows in the vicinity of the onshore substation in screening views of the onshore substation and National Grid infrastructure.

118. The proposed permanent diversions will be completed by the end of the construction phase. Any temporary diversions to be used during the construction phase will be agreed post-consent with the Local Planning Authority.

119. Further details regarding the management of PRoWs, including temporary management measures. Are detailed within the Outline PRoW strategy (document reference 8.4), secured under the requirements of the draft DCO, and which is submitted with this DCO application.

4 Landscape Management Plan

120. In accordance with the requirements of the draft DCO, prior to construction, a LMP for each phase of the works would be produced to include details of all proposed hard and soft landscaping works, including:

- Location, number, species, size and density of any proposed planting, including any trees.
- Cultivation, importing of materials, protection, and weed control to ensure plant establishment.
- Proposed finished heights, form and gradient of any potential earthworks.
- Hard surfacing materials.
- Details of existing trees and hedges to be retained with measures for their protection during the construction period.

- Retained historic landscape features such as ditches, banks and hedgerows and proposals for restoration, where relevant.
- Implementation timetables for all landscaping works.
- Soil retention, handling and protection.
- The provision of a scheme of sustainable drainage will be integrated into the details of landscaping works at the onshore substation and National Grid infrastructure.
- Integration of relevant sections of substation design principles.

121. All landscaping works would be carried out in accordance with the LMP, unless otherwise agreed in writing by the relevant planning authorities, and to a reasonable standard in accordance with the relevant recommendations of appropriate British Standards or other recognised codes of good practice. The specific standards are to be agreed with the Local Planning Authority.

122. A LMP will be developed for the onshore substation and National Grid infrastructure. The OLMP (***section 3.6***) has been taken into account in the assessment in the ES as part of embedded mitigation. Final details of the planting and earthworks for the project would be developed prior to construction, as part of the LMP Plan under the requirements of the draft DCO. These details would be agreed with the Local Planning Authority. The LMP for the onshore substation and National Grid infrastructure may include:

- Drawings indicating cross-section with long cross-sections to include typical elevations of the onshore substation and National Grid substation. These drawings would also indicate proposed floor levels and proposed contours.
- A detailed scheme of tree and shrub planting and aftercare. This would include details of soil restoration and ground preparation, species choice, stock size, spacing, protection and a program of weed control and aftercare.
- A scheme of protection to demonstrate how new tree and hedge planting would be protected against deer, rabbits / hares etc. The detail would also indicate a variety of access gates within the detail for badgers or other creatures that may have, for instance, established routes through the restored areas.
- A process to deal with incidents of ash die back, where relevant to the onshore development area, including removal of diseased specimens and re-planting of replacement native species (non-ash species).
- Details of local provenance suppliers of plant material for inclusion within the specification.
- Management of trees and hedgerows in the longer term.

5 Habitats and Non-Avian Species

123. This section details the requirements for ecological mitigation measures that are reflective of the ecological surveys and impact assessment carried out for the proposed East Anglia TWO project, detailed in ***Chapter 22 Onshore Ecology*** of the ES (document reference 6.1.22).

124. The existing environment described throughout this section is informed by desk-based studies and field surveys detailed within the ***Chapter 22 Onshore Ecology*** of the Environmental Statement (document reference 6.1.22). A pre-construction walk over survey would be carried out, where possible, to confirm the location and extent of any sensitive habitats identified within the ES in those areas affected by the onshore infrastructure construction as determined by the final East Anglia TWO project design.

125. Onshore preparation works, including pre-construction surveys (for example engineering or archaeology surveys), will also be subject to relevant ecological surveys. mitigation and management. This will be detailed further within the final EMP produced post-consent, as secured under the requirements of the draft DCO.

5.1 Embedded Mitigation

126. Embedding mitigation into the project design is a type of primary mitigation and is an inherent aspect of the EIA process.

127. Where embedded mitigation measures have been developed into the design of the proposed East Anglia TWO project with specific regard to habitats and non-avian species, these are described in ***Table 5.1***. Embedded mitigation measures specific to certain ecological receptors are detailed further throughout this section where appropriate. Embedded mitigation measures in relation to ornithological receptors are covered in ***section 6***.

128. Any further mitigation measures suggested within this section are therefore considered to be additional. Additional mitigation measures may be adopted if they are identified during the EIA process specifically to reduce or avoid any predicted significant impacts.

Table 5.1 Embedded Mitigation Measures relevant to Habitat and non-Avian Species

Parameter	Mitigation Measures Embedded into the Project Design
General	
Site selection	The proposed East Anglia TWO project has undergone an extensive site selection process to date which has involved incorporating environmental considerations in collaboration with the engineering design requirements. For further details please refer to ***Chapter 4 Site Selection and Assessment of Alternatives***.
Designated sites	The route of the onshore cable corridor was influenced from the onset of the project design process by the location of designated sites, specifically The Sandlings SPA and component Leiston-Aldeburgh SSSI. The project design minimises the overlap of the onshore cable corridor with these designated sites, choosing a crossing at the narrowest point, within habitat where no records of ornithological target species were found. Where the onshore cable corridor crosses these designated sites, HDD or open cut crossing techniques may be employed. The Applicant will not undertake onshore cable route construction works to cross the Sandlings Special Protection Area (SPA) / Leiston – Aldeburgh Site of Special Scientific Interest (SSSI) within the SPA/SSSI boundary or within 200m of the SPA/SSSI boundary during the breeding bird season unless otherwise agreed with Natural England that bird breeding activities within 200m of the SPA/SSSI crossing works area have ceased. The timing of this seasonal restriction will be based on monitoring information provided by the Ecological Clerk of Work (likely to be mid-February to end of August). Open trench works associated with crossing the SPA (including works within 200m of the SPA boundary) will be undertaken within approximately three months of excavation works commencing (comprising approximately one month within the boundary of the SPA and approximately two months within 200m of the boundary of the SPA). HDD works associated with crossing the SPA (including the establishment and subsequent removal of HDD entry pit and exit pit working areas) will be undertaken over a two year period with works restricted to up to six months per year due to the seasonal restriction. Landscaping works such as hedgerow replanting may be undertaken outside these periods to ensure optimal planting conditions are achieved.
HDD at landfall	The landfall location was influenced from the onset of the project design process by the presence of designated sites, specifically Leiston-Aldeburgh SSSI. The project has committed to the use of HDD (refer to ***Chapter 6 Project Description***) at the landfall to minimise potential impacts to the cliffs, beach or intertidal area (and Leiston-Aldeburgh SSSI). Furthermore, the landfall HDD temporary working area is located inland from the SSSI. There will also be no requirement for access onto the beach at this location. Therefore, there will be no potential for any interaction with this SSSI site through the use of the HDD technique at the landfall.
Construction of onshore cable corridor	The onshore cables will be installed underground to minimise operational impacts to ecological receptors and landscape and visual impacts.

Parameter	Mitigation Measures Embedded into the Project Design
General	
	Where appropriate, construction work areas would be accessed using existing tracks and road (to be developed as part of the Traffic Management Plan). Reinstatement of all temporary working areas to agreed specifications.
Maintenance and operational measures	Suitable maintenance of any newly planted sections of hedgerow, shelterbelts and woodlands following construction would have an aftercare period of ten years. One for one replacement planting of failed plants would only be required for the first five years. Lighting sensitive to bats would be incorporated according to guidance in Bats and Artificial Lighting in the UK (Bat Conservation Trust (BCT) and Institute of Lighting Engineers (ILE) 2018).
Best practice	During all phases of the project, activities will adhere to current best practice guidelines, such as the Environmental Good Practice on Site Guide (fourth edition) by the Construction Industry Research and Information Association (CIRIA), 2015.

5.2 Woodland, Scrub and Trees

5.2.1 Baseline

129. Detailed baseline relating to Woodland, Scrub and Trees is provided in ***Chapter 22 Onshore Ecology*** of the ES, ***sections 22.5.2.3-6***. In summary, semi-natural and plantation woodland are found in numerous locations along the onshore cable route, both are considered to be of medium importance.

130. Grove Wood, Buckle's Wood and Great Wood are valued at a county level. There is woodland within the Sandlings SPA and Leiston to Aldeburgh SSSI while other woodland is valued at a local level.

131. Scrub is present in parts of the onshore cable route and represent a range of habitat sub-types. Scattered trees are considered to be of high ecological value and are present throughout the onshore development area. Habitat information is included in ***Appendix 22.3*** of the ES.

5.2.2 Embedded Mitigation

132. As part of embedded mitigation, the onshore infrastructure will avoid areas of woodland and scrub where practicable. As such, the assessment presented in **Chapter 22 Onshore Ecology** of the ES is based on an understanding of the areas where tree loss will be unavoidable, rather than assume that all woodland present within the onshore development area will be lost. The area of woodland that will be lost will be very low and at least an equivalent area of lost woodland

will be replanted. However, there are two locations where woodland losses will be unavoidable, in proximity to Aldeburgh Road and Laurel Covert.

5.2.3 Additional Mitigation

5.2.3.1 Pre-construction Survey

133. A pre-construction walkover survey would be undertaken by the ACoW, ECoW and an engineer to assist in micro-siting of accesses, haul road and jointing bays along the onshore cable route to minimise woodland, tree and scrub loss. Any veteran trees present within the onshore development area would be identified during this survey as well as any tree with bat roost potential. The surveys and assessments would be undertaken pre-construction to provide the works contractor with part of the baseline construction information. The surveys would show actual position of trees, their condition and value and indicate the extent of root protection zones and all features of bat roost potential. This survey can be conducted at any time of year.

134. The ACoW would work in line with the British Standard (BS) 5837,2012 – (Trees in relation to design, demolition and construction recommendations) to reduce the number of trees to be removed and to protect trees situated in or adjacent to the working width. The ACoW would produce an Arboricultural Method Statement (AMS) to be provided as part of the EMP.

135. The AMS would detail the tree and hedge protection required at the onshore substation and at each hedge crossing along the onshore cable route, such as fencing or ground protection. This information would assist the contractor with the ACoW to micro site accesses, haul road and jointing bays and manage the storage of materials and movement of vehicles to provide optimum embedded mitigation against tree and hedge loss or damage.

136. The survey will also inform opportunities for replacement planting, and at least an equivalent area of lost woodland will be replanted following completion of the works (taking account that trees cannot be replanted directly above the buried cables) particularly through delivery of the OLMP.

5.2.3.2 During Construction

137. Mitigation measures will be identified once detailed design is completed and the exact nature of impacts is known. Examples of the types of mitigation measures that may be considered include:

- Root protection areas to be fenced off during construction for trees in proximity to the works that area to be retained; and

- Introduce biosecurity measures, including cleaning of vehicles, equipment and personnel upon leaving infected areas during construction, for example to minimise the spread of ash dieback.

5.2.3.3 Post-Construction

138. Following the construction phase of the proposed East Anglia TWO project, at least an equivalent area of woodland removed will be replanted particularly through delivery of the OLMP.

139. To avoid creating a wind tunnel effect at Aldeburgh Road, replacement planting in the form of woodland edge habitat will be undertaken, 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.

140. To ensure development to a satisfactory standard, there will be an agreed procedure for joint annual inspection of all planting areas by representatives of the relevant Local Planning Authorities and the Applicant at the end of each growing season and for each year of the aftercare period. Areas found not to be thriving should be treated to such additional works as are required to rectify the situation within the next growing season, as agreed with the Local Planning Authority.

5.3 Hedgerows

5.3.1 Baseline

141. Hedgerows are a UK Habitat of Principal Importance. Hedgerows are Priority Habitats in the UK Biodiversity Action Plan (UKBAP) and Suffolk Local Biodiversity Action Plan (LBAP).

142. Detailed baseline relating to Hedgerows is provided in ***section 22.5.2.2*** of ***Chapter 22 Onshore Ecology*** of the ES. A hedgerow schedule is provided as ***Annex 1*** to this OLEMS. The local hedgerow resource is of high importance although it should be noted that there are 65 hedgerows identified within the onshore development area that are assessed as important hedgerows in terms of ecological criteria (species rich and intact hedge; or hedgerows which have been recorded as having a high level of bat activity (usage)), or in terms of archaeological criteria (marks a boundary between parishes existing before 1850; or marks an archaeological feature of a site that is a scheduled monument or noted on the Historic Environment Record; or marks the boundary of a pre-1600 estate or manor or a field system pre-dating the Enclosure Acts).

143. The Applicant is seeking the rights to remove important hedgerows as per ***Annex 1*** and illustrated on the Important Hedgerows and Tree Preservation Order Plan (document reference 2.10). The construction of the proposed East Anglia TWO project is not seeking to fully remove these important hedgerows but is seeking rights to remove short sections to accommodate the onshore cable route, or for further landscape mitigation such as tree planting or strengthening of hedgerow sections. ***Annex 1*** provides details on which hedgerows are to be partially removed and which are identified for landscape mitigation.

5.3.2 Embedded Mitigation

144. As part of embedded mitigation, hedgerow losses will be minimised where practicable. Where the onshore cable route crosses an important hedgerow, the onshore cable route will be reduced to the minimal working width (16.1m where possible) thus minimising the total length of hedgerow removed.

5.3.3 Additional Mitigation

5.3.3.1 Pre-construction Survey

145. A pre-construction hedgerow survey would inform the production of an AMS. The AMS would assign a hedgerow a unique crossing number, the species composition of each hedge would be stated (including a pre-construction assessment of all trees within hedges, any special considerations (such as protected species) and the proposed species replanting mix stated. This would be undertaken in association with the proposed East Anglia TWO project landscape architects and in consultation with the relevant stakeholders, prior to the commencement of construction work at each hedgerow crossing.

146. A photographic survey would be incorporated as part of the AMS in order to confirm the hedgerow condition, bank/ditch profile and to inform reinstatement techniques. The replacement planting, as far as is reasonably practicable, will reflect the findings of these surveys.

5.3.3.2 During Construction

147. Mitigation measures will be identified once detailed design is completed and the exact nature of impacts is known. A mitigation plan will be produced and prior to the removal of hedgerows and included as part of the Ecological Management Plan, as secured under the relevant requirement of the DCO. Hedgerow root protection areas to be fenced off during construction, where relevant.

148. Where hedgerows provide habitat for protected species, specific mitigation measures are addressed under the relevant protected species title.

5.3.3.3 Post Construction

149. Following the construction phase of the proposed East Anglia TWO project:

- Temporarily lost hedgerows will be reinstated post-construction. Replanting of hedgerows would take place in the first available planting season following construction and would aim to enhance baseline conditions where possible for example through improved species diversity.
- There will be improvements made to hedgerows immediately adjacent to the removed sections where possible.
- The replanting mix and pattern would be established on the basis of the pre-construction survey and AMS, in accordance with the Hedgerow Regulations, 1997. Replanting would use shrubs of the same species and in the same general proportions as existed pre-construction (native preferably of local origin). Improvement of hedgerows immediately adjacent to the replanted sections will be carried out where possible.
- A detailed scheme of hedge planting aftercare will be provided, to be agreed with the Local Planning Authority prior to reinstatement works commencing. This will include details of soil restoration and ground preparation, species choice, stock size, spacing and a program of weed control and aftercare.
- To aid establishment of replanted trees and shrubs, they would be protected by stock-proof fencing and either rabbit-proof fencing, deer-proof fencing or tree guards.
- To ensure development to a satisfactory standard, there will be an agreed procedure for joint annual inspection of all planting areas by representatives of the relevant Local Planning Authorities and developers at the end of each growing season and for each year of the aftercare period. Areas found not to be thriving should be treated to such additional works as are required to rectify the situation within the next growing season, as agreed with the Local Planning Authority.

5.4 Grasslands

5.4.1 Baseline

150. Only two types of grassland (improved and poor semi-improved grassland) are present throughout the onshore development area. Improved grassland is formed of short sward grasses with areas of scrub vegetation, whereas poor semi-improved grassland is comprised of coarse ruderal grass and herb species. Both habitat types are classes as receptors of low ecological value.

151. Detailed baseline relating to improved grassland and semi-improved grassland is provided in ***section 22.5.2.7*** and ***section 22.5.2.8*** of ***Chapter 22 Onshore Ecology*** of the ES.

5.4.2 Embedded Mitigation

152. The proposed East Anglia TWO project has undergone an extensive site selection process, detailed in ES ***Chapter 4 Site Selection and Assessment of Alternatives*** (document reference 6.1.4), to refine the potential construction footprint as far as practicable.

153. As all areas of grassland are considered to be of low ecological value in accordance with the criteria set out in ***Table 22.9*** of ***Chapter 22 Onshore Ecology*** of the ES, further embedded mitigation is not required.

5.4.3 Additional Mitigation

154. Given the large extent of improved and semi-improved grassland surrounding the onshore development area, no additional mitigation measures are proposed.

5.5 Coastal Habitats

5.5.1 Baseline

155. Coastal vegetated shingle and coastal grassland have been identified along the coastline, at the eastern edge of the onshore development area.

156. Coastal vegetated shingle is a Habitat of Principal Importance (HPI) for Conservation in England and a UKBAP and Suffolk LBAP priority habitat. Coastal grassland is comprised of comprised of gorse, bracken and marram grass and considered to be of high importance.

157. Detailed baseline relating to coastal habitats is provided in ***section 22.5.2.10*** and ***section 22.5.2.11*** of ***Chapter 22 Onshore Ecology*** of the ES.

5.5.2 Embedded Mitigation

158. The proposed East Anglia TWO project has committed to using HDD construction techniques at the landfall, which avoids any interaction with coastal habitats, i.e. no requirement for beach access. As such, coastal habitats would not be affected directly or indirectly by the proposed East Anglia TWO project.

5.5.3 Additional Mitigation

159. As there will be no interaction with coastal habitats as a result of the proposed East Anglia TWO project, no additional mitigation is required.

5.6 Watercourses and Ponds

5.6.1 Baseline

160. There are 11 standing water bodies within the onshore development area which are considered to be of high ecological value. Sections of the Hundred River and Friston Beck are within the onshore development area. The Hundred River is

considered to be of high ecological value. Friston Beck is not considered further within this OLEMS as, it is not considered to be of ecological value.

161. Detailed baseline information relating to watercourses and ponds is provided in ***section 22.5.2.9*** of ***Chapter 22 Onshore Ecology*** of the ES.

5.6.2 Embedded Mitigation

162. No standing water bodies are expected to be impacted as a result of the proposed East Anglia TWO project due to micrositing of the onshore infrastructure to avoid know standing waterbodies.

163. Crossing of the Hundred River will use a trenched technique, whereby temporary dams (composed of sand bags, straw bales and ditching clay, or another suitable technique) would be installed upstream and downstream of the crossing point. The cable trench would then be excavated in the area of dry river bed between the dams, with river flow maintained through the use of a temporary pump, pipe or flume.

164. The alternative wet open cut technique involves equipment operating from either the banks or from flume pipes laid in the river to maintain flow and provide an equipment crossover from one bank to the other. After excavation of the trench, a section of ducting is placed into the trench.

5.6.3 Additional Mitigation

5.6.3.1 Pre-construction Survey

165. A pre-construction walkover survey would be conducted to confirm the location, type and dimensions of water bodies.

5.6.3.2 During Construction

166. Mitigation measures will be identified once detailed design is completed and the exact nature of impacts is known. Examples of the types of mitigation measures that may be considered include:

- The amount of time that temporary dams are in place on the Hundred River would be restricted to a reduced programme where possible, and flumes or pumps would be adequately sized to maintain flows downstream of the obstruction whilst minimising upstream impoundment. Furthermore, a fish rescue would be undertaken in the area between the temporary dams prior to dewatering;
- The temporary bridge or culvert for the haul road would be adequately sized to avoid impounding flows. If a culvert is used, the invert level of the structure will be installed below the natural bed of the channel so that sediment

transport and the movement of fish and aquatic invertebrates can be maintained;

- Any aquatic vegetation removed during the process would be retained on the adjacent banks for 24 hours to allow the aquatic fauna to return to the water;
- Bank-side vegetation would be retained where practicable, with trees and shrubs coppiced rather than grubbed-out where practicable;
- Bank and bed material would be stored during construction to aid reinstatement;
- The timing of the works would be carefully selected, and periods of low flow would be chosen wherever practicable; and
- A range of embedded mitigation measures will be implemented to reduce the potential for an increase in the supply of fine sediment, including minimising the area of open ground at any one time where practicable by confining onshore cable installation activities to the defined four onshore cable route sections that will be operative for a short period only, storing and reinstating topsoil and using hardstanding in mobilisation areas.

5.6.3.3 Post Construction

167. Bed and bank habitats will be reinstated and where possible improved following the completion of the works. Bank and bed materials removed for construction would be stored separately and replaced in the reverse order in which they were removed, to promote the re-establishment of appropriate habitat.

168. Geotextile matting or other suitable means would be used, wherever necessary, to reinforce banks during reinstatement.

5.7 Arable Land

5.7.1 Baseline

169. The largest habitat by area within the onshore development area is arable land. All areas of arable land are considered to be of low ecological importance.

170. Detailed baseline information relating to arable land is provided in ***section 22.5.2.1*** of ***Chapter 22 Onshore Ecology*** of the ES.

5.7.2 Embedded Mitigation

171. The proposed East Anglia TWO project has undergone an extensive site selection process, detailed in ES ***Chapter 4 Site Selection and Assessment of Alternatives*** (document reference 6.1.4), to refine the potential construction footprint as far as practicable.

172. As areas of arable land are considered to be of low ecological value in accordance with the criteria set out in ***Table 22.9*** of ***Chapter 22 Onshore Ecology*** of the ES, further embedded mitigation is not required.

5.7.3 Additional Mitigation

173. No additional mitigation is proposed.

5.8 Invasive Species

5.8.1 Baseline

174. Himalayan balsam is present along the Hundred River upstream of, but not within, of the onshore development area. This is an invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). No other invasive non-native species were noted within the onshore development area through desk-based or field surveys.

5.8.2 Embedded Mitigation

175. No embedded mitigation measures for non-native invasive species have been incorporated into the project design.

5.8.3 Additional Mitigation

5.8.3.1 Pre-construction Survey

176. A pre-construction walkover survey would be undertaken to confirm whether invasive plant species have spread from current known locations. This would be undertaken between April and September.

177. A detailed Invasive Species Method Statement for dealing with invasive species would be prepared, and included within the EMP, focusing on preventing their spread. This would include for management of Himalayan balsam prior to the commencement of construction, including a plan showing the location of identified invasive plant species. This protocol would be used if further stands were found during construction activities.

5.8.3.2 During Construction

178. Best practice measures should be adhered to during construction to avoid the spread of non-native invasive species. Particular care will be taken when working in the vicinity of watercourses. This will include:

- Arrive at the site with clean footwear and vehicles;
- Ensure footwear is clean (visually from soil and debris) before leaving the site;
- Ensure vehicle is kept clean - in particular remove any accumulated mud before leaving the site;
- Make use of facilities provided on the site to clean footwear/equipment;

- Keep access to a minimum;
- If practical do not take vehicles onto site, keep to established tracks and park vehicles on hard standing;
- Where possible avoid areas of livestock and areas with known plant disease; and
- Plan visits so that the highest risk visit is the last one of the day.

179. Any contaminated areas (if present) will be marked out.

180. Soil storage and handling would be carefully managed in accordance with the agreed Invasive Species Method Statement to avoid the spreading of invasive species.

181. Toolbox talks focussing on invasive species would be given to site staff and would include information on recognising invasive species. Briefing notes containing this information would also be available at the site offices.

182. If alien or invasive species were found on site, the ECoW would be informed. The area would be demarcated, and appropriate signage installed until the appropriate action can be taken.

5.8.3.3 Post Construction

183. No post-construction mitigation measures are proposed.

5.9 Badgers

5.9.1 Baseline

184. Detailed baseline relating to Badger *Meles meles* is provided in ***section 22.5.3.2*** of ***Chapter 22 Onshore Ecology*** of the ES. Five active badger setts are currently within the onshore development area, and as a worst case scenario it is assumed that all five would need to be destroyed, with loss of foraging habitat also occurring.

185. Badgers are protected under the Protection of Badgers Act 1992. Their ecological value is considered to be low.

5.9.2 Embedded Mitigation

186. The proposed East Anglia TWO project has undergone an extensive site selection process, detailed in ES ***Chapter 4 Site Selection and Assessment of Alternatives*** (document reference 6.1.4), to refine the potential construction footprint as far as practicable. Impacts to potential badger habitat including woodland, hedgerow have been limited wherever possible.

187. Where possible, known setts will be avoided as detailed project design is progressed; however, as a worst-case scenario it is assumed that these setts would need to be destroyed. Furthermore, construction would represent the temporary loss of arable and hedgerow foraging habitat. This is sub-optimal foraging habitat, but in the context of the available foraging resource surrounding the onshore development area, this is relatively small in scale.

5.9.3 Additional Mitigation

5.9.3.1 Pre-construction Survey

188. Badgers are a highly mobile species and can occupy their setts at different times over a number of years and seasons. A pre-construction walkover survey of the onshore development area would be undertaken in order to assess the status and current use of previously identified setts and identify any new setts excavated. Following this survey, consultation would be undertaken with Natural England detailing outline construction methods; this will enable the requirement for a mitigation licence to be determined.

5.9.3.2 Pre-construction Licencing

189. If following the pre-construction surveys, a disturbance licence is required, badgers would need to be excluded prior to works starting. A licence from Natural England to interfere with setts would be sought to undertake a controlled exclusion to ensure that no badgers remain in the sett at the time of construction. This would involve the use of one-way gates on the sett entrance and a monitoring period of at least three weeks. Once sure that the sett is empty, works could then proceed.

190. Licences allowing works to proceed close to active badger setts, as works that would cause disturbance as defined by Natural England, would be acquired. Licences for disturbance or sett exclusion are normally only issued for the period 1st July – 30th November, and any deviation from this period would need to be discussed and agreed with Natural England in advance of submitting the licence application.

5.9.3.3 During Construction

191. Mitigation during construction, if required, would be detailed in the license application submitted to Natural England. This is likely to state that any excavations left open overnight would have a ‘ramp’ installed; a scaffold plank or similar would be suitable. This is to allow Badgers or other mammals a means to escape in the unlikely event they fall into any open jointing bays.

192. The toolbox talks given to site staff would include information on recognising signs of badgers and their setts. Briefing notes containing this information would also be available at the site offices.

193. A protection buffer zone of 30m will be set around all active setts that had not been closed under licence prior to construction (including appropriate noise, vibration and lighting minimisation such as directional task lighting to avoid lighting woodland or water's edge, low vibration plant, acoustic panels and, where possible, working outside of the buffer zone to ensure decreased impact upon badgers).

194. Precautionary methods of workings will be utilised to minimise harm to badgers, including:

- Chemicals will be stored as far away from the setts and badger paths as possible;
- Trenches deeper than 1m must be covered at the end of each working day or include a means of escape for any animal falling in (badgers would continue to use established paths across a site even when construction work has started); and
- Any temporarily exposed open pipe system will be capped in such a way as to prevent badgers gaining access when contractors are off site.

195. If badgers or new setts were identified during construction, works would cease in the immediate area and the ECoW will be informed. The area would be demarcated, and the licence would be obtained before works can proceed, if required.

196. The ECoW would monitor the area during construction for new badger setts.

5.9.3.4 Post Construction

197. Any setts subjected to a Natural England Licence, including those not directly affected by works, would be revisited when all works have been completed. The results of this visit would form part of the licence return reports. The survey timing would be subject to the licence return dates.

5.10 Bats

5.10.1 Baseline

198. Detailed baseline relating to Bats is provided in ***section 22.5.3.3*** of ***Chapter 22 Onshore Ecology*** of the ES. Bat are listed as a European Protected Species (EPS) in The Conservation (of Habitats and Species) Regulations 2017. Activity transect surveys have identified that the areas of woodland, hedgerows and areas of scrub (as well as other habitats) throughout the onshore development area also provide and support a diverse population of foraging/commuting bats within Suffolk. The 2018 activity transects show that there is a higher density of bats using the transect areas within the western area of the onshore development

area. However, foraging/commuting bats were observed albeit in lower densities within the transect areas near to the coastline.

199. Hedgerows which have been recorded as having a high level of bat activity (usage) are considered to be important for bats. In addition, due to the rarity of the bat species, any hedgerow with at least one barbastelle pass should also be considered as an 'important' hedgerow. The 2018 surveys indicate that transect area 3 and 4 recorded at least one barbastelle pass.

5.10.2 Embedded Mitigation

200. Loss of trees has been minimised through careful routeing of the onshore cable route. Onshore cable route refinement will avoid identified bat roosts where practicable.

201. Hedgerow losses will be minimised where practicable. Where the onshore cable route crosses an important hedgerow, the onshore cable route will be reduced to the minimal working width (16.1m where possible) thus minimising the total length of hedgerow removed.

202. Along the length of the onshore cable route, no 24-hour lighting is anticipated to be required except that associated with HDD operations and security lighting at the CCSs. Task lighting will be utilised in localised areas where required.

203. An Artificial Light Emissions Management Plan will be developed as required under the relevant requirement of the draft DCO and is summarised within the OCoCP.

5.10.3 Additional Mitigation

5.10.3.1 Pre-construction Survey

204. Further surveys for bat activity and bat roosts would be undertaken pre-construction along all routes identified for removal to provide updated assessments of the commuting value of these routes. These would be undertaken in accordance with the most recent guidance (currently Bat Conservation Trust 2016) and would use a similar methodology as the base line surveys including the survey period being conducted between April and September. The information would form the basis of a lighting strategy focused on minimising impacts during sensitive construction months. The strategy would be agreed with the Local Planning Authority and construction implemented in line with the strategy.

5.10.3.2 During Construction

205. All temporary lighting to be designed line with the BCT Bats and Lighting in the UK guidance (2018). This to include the use of directional lighting during construction.

206. Construction phase lighting will be limited to between 7am-7pm in low light conditions, with directional security lighting outside of these times, and dark corridors will remain in place during the construction phase.

207. Pre-cautionary methods will be used when removing trees with bat potential but no presence observed (i.e. soft-felling).

5.10.3.3 Post Construction

208. Where hedgerows are temporarily lost during construction, there will be a replanting regime (or use of hazel hurdles) and restoration of adjacent habitat where possible for bats. Replanting and restoration will occur as soon as is practicably possible.

209. Replacement habitat will be managed and maintained to ensure the bat population will persist and monitoring of the population will be undertaken to assess the success of any mitigation where possible.

210. Bat boxes will be considered within the onshore development area, where possible, and detailed further within the EMP that will be produced post-consent.

211. Further surveys for bats would be undertaken post-construction. This would include reinstated hedgerow sections. Three surveys would take place following the same methodology as the baseline surveys, these would take place in May, July and September and in years one, three and five post construction.

5.11 Great Crested Newts

5.11.1 Baseline

212. Detailed baseline relating to Great Crested Newt *Triturus cristatus* is provided in ***section 22.5.3.5*** of ***Chapter 22 Onshore Ecology*** of the ES. Presence of great crested newts has been confirmed within one pond within the onshore development area and up to 250m from its boundaries.

213. All ponds will be avoided during by onshore cable route (no ponds are present within the landfall or onshore substation locations), however temporary impacts to the surrounding terrestrial habitat could potentially occur.

214. Suitable terrestrial habitat for supporting foraging and hibernating great crested newts was observed throughout the onshore development area. Great crested

newts are an EPS and a Suffolk LBPA priority species. As an EPS, great crested newts are considered to be of high importance.

5.11.2 Embedded Mitigation

215. As part of the project design, all known ponds have been avoided by the onshore cable route.

5.11.3 Additional Mitigation

5.11.3.1 Pre-construction Survey

216. All ponds within 250m of the proposed works will be surveyed for Great Crested Newts prior to construction. This is to ensure that the surveys meet Natural England's data requirements for informing a mitigation licence if required, which is typically between two – four years old. These surveys will be undertaken between March and mid-June in accordance with the latest guidance (of which the Great Crested Newt Mitigation Guidelines (English Nature, 2001) are current at the time of writing).

5.11.3.2 Further Pre-Construction Mitigation

217. Mitigation measures will be identified once the detailed design is completed and the exact nature of impacts is known. Onshore cable route refinement will be undertaken where practicable to avoid great crested newt terrestrial habitat.

218. An exclusion programme of newts may be undertaken under licence from Natural England. This would involve the installation of amphibian-proof fencing around the working width (e.g. junction bay compounds and haul roads) in all areas identified as great crested newt breeding ponds during the pre-construction survey and using pit-fall trapping and carpet tiles to catch and remove all great crested newts prior to construction. This would take place during suitable conditions in the newt active season March-October inclusive for a period of time appropriate to the population size.

219. Newts would be transported to suitable habitat at least 50m away from construction works. These receptor sites would be identified during the preconstruction walkover survey and clearly marked on maps to enable landowner permission to be gained prior to works commencing. The amphibian fence would remain in place until the works were complete in that area and the ground was remade.

5.11.3.3 During Construction

220. Precautionary methods of working will be utilised during construction, including tool box talks and supervision by the ECoW.

221. If any newts are found during works on other parts of the onshore cable route then works would cease in the area and the ECoW would be called to site immediately to assess the situation and advise on a course of action. The decided course of action would be in accordance with licence requirements and discussions with Natural England.

222. Any other amphibians caught would be relocated outside the area of works and into suitable habitat by the ECoW.

223. The toolbox talks given to site staff would include information on recognising British amphibians. Briefing notes containing this information would also be available at the site offices together with copies of the licence.

5.11.3.4 Post Construction

224. Post construction monitoring would be implemented to monitor great crested newt populations. This would be undertaken in accordance with the Natural England Licence requirements which would typically be for two years post construction. The surveys would take place between April and June.

5.12 Reptiles

5.12.1 Baseline

225. Detailed baseline information relating to reptiles is provided in ***section 22.5.3.6*** of ***Chapter 22 Onshore Ecology*** of the ES. Suitable habitat for supporting common reptile species have been identified at seven locations along the onshore cable route and in the onshore development area.

226. No further reptile surveys will be undertaken as habitats recorded are not thought to be of a suitable size to support significant reptile populations, however appropriate mitigation measures (i.e. habitat manipulation works) to ensure compliance with the legislation afforded to reptiles will be developed and adhered to during construction related activities where required. All reptile species are protected under the under the Wildlife and Countryside Act 1981 (as amended). As a nationally important species which is rare in the region, reptiles are considered to be of medium importance.

5.12.1 Embedded Mitigation

227. Habitat such as field boundaries, including hedgerows, can act as wildlife corridors for reptiles. Where works will not cross hedgerows or watercourse, a buffer against field boundaries from construction activities would be in place to reduce the potential risk of affecting reptiles along the onshore cable route.

5.12.2 Additional Mitigation

5.12.2.1 Pre-construction Survey

228. No preconstruction survey for reptiles is required.

5.12.2.2 During Construction

229. In the event a reptile is found during construction works work would stop in the immediate area and the ECoW would undertake a hand search of the area where the reptile was found. If any reptiles were caught they would be translocated by the ECoW. The ECoW would supervise the recommencement of construction.

230. Mitigation measures will be identified once detailed design is completed and the exact nature of impacts is known. Examples of the types of mitigation measures that may be considered include precautionary methods of working during construction, including toolbox talks, habitat manipulation and ecological supervision of works will be required.

6 Ornithology

6.1 Baseline

6.1.1 General Breeding Birds

231. Detailed baseline relating to breeding birds is provided in ***Chapter 23 Onshore Ornithology*** and ***Appendix 23.1*** of the ES. Key legislation relating to the protection of breeding birds, their eggs, nests and young, is the Wildlife and Countryside Act 1981.

6.1.1.1 Description of Study Areas

232. The onshore ornithology study area is based on the onshore development area, which includes the landfall, onshore cable corridor, onshore substation and national grid infrastructure. Based on scientific evidence and professional judgement, a 400m buffer has also been included around the onshore development area, which is considered to be the uppermost spatial extent of potential disturbance-displacement impacts associated with any ornithological receptor assessed in this ES chapter. The actual extent of potential impacts is likely to be species-specific, with some species having smaller extents of potential impact than 400m from source. The study areas for specific onshore ornithological receptors are provided in ***Table 6.1***.

Table 6.1Study Areas for Different Onshore Ornithological Receptors

Data/Survey	Study Area
Statutory designated sites	Designated sites that are located within, and up to 10km from, the onshore ornithology study area. This buffer is to take into consideration the maximum extent of foraging range for any SSSI species present within the onshore development area
Biological Records	Within 2km of the onshore ornithology study area
Onshore ornithology study area	Within and up to 400m of the onshore development area

6.1.2 Sandlings SPA/ Leiston-Aldeburgh SSSI Breeding Birds

6.1.2.1 Nightjar

233. As a qualifying interest of the Sandlings SPA, and a Schedule 1 species, nightjar is classified as being of High Nature Conservation Importance.

234. Nightjars breed on dry lowland heaths in England although can also breed in open woodland with bracken, and clearings in conifer plantation. Suitable habitat within the onshore ornithology study area was limited to the Sandlings SPA, and a total of six territories were recorded within the SPA (outside of the onshore development area) in 2018.

235. The closest territory centre in 2018 was located approximately 650m from the landfall area, with two territories within 200m of the onshore cable corridor section of the onshore development area. The onshore substation and National Grid infrastructure would not be in an area suitable for nightjar, and over 3km from the nearest recorded territory.

6.1.2.2 Woodlark

236. As a qualifying interest of the Sandlings SPA, and a Schedule 1 species, woodlark is classified as being of High Nature Conservation Importance.

237. Woodlarks may breed on heaths, scrubland, neglected farmland and golf courses, avoiding areas of intensive agriculture. The distribution of woodlark territories recorded during baseline surveys in 2018 reflected these habitat preferences, with all observations occurring within heath or scrub habitats, mainly within the SPA. The large majority of the onshore development area comprises intensive agricultural habitats, with only small areas of scrub and semi-improved grassland where it overlaps with the northernmost part of the SPA, and to a lesser extent in patches south of Aldringham.

238. The closest woodlark territory in 2017 and 2018 was over 300m from the landfall area, but was in close proximity to the onshore cable corridor. The onshore substation and National Grid infrastructure would not be within an area of suitable habitat for woodlark, and over 2km from the nearest recorded territory.

6.1.2.3 Turtle Dove

239. As a named component of the Leiston-Aldeburgh SSSI, turtle dove is classified as being of High Nature Conservation Importance.

240. Turtle doves nest in mature hedgerows, tall scrub and woodland edges, often close to freshwater, feeding in weedy arable fields. Up to ten turtle dove territories were occupied within the onshore ornithology study area in 2018, mainly within the northern part of the Sandlings SPA and adjacent farmland, in proximity to the onshore development area. The species was also present in the Aldringham area, but there were no records west of Knodishall Common. The onshore substation and National Grid infrastructure would not be within an area of suitable habitat for turtle dove, and around 1.6km from the nearest recorded territory.

6.1.2.4 Nightingale

241. As a named component of the Leiston-Aldeburgh SSSI, nightingale is classified as being of High Nature Conservation Importance.

242. Nightingales occupy a range of habitats, but prefer scrub and woodland thickets, often in the vicinity of water. Scrubby field margins coupled with an adjacent belt of rank grass and ruderal vegetation provide thick cover that nightingales require for foraging. Approximately seven territories were located within the onshore ornithology study area in 2018. Five of these were at the edges of the Sandlings SPA, outside of the onshore development area, with a further two in scrub habitats within the onshore development area at the landfall location. The species was absent to the west of Aldringham and as such, the onshore substation and National Grid infrastructure would not be within an area of suitable habitat for nightingale.

6.1.2.5 Marsh Harrier

243. As a named feature of the Leiston-Aldeburgh SSSI, and other designated sites within 10km, marsh harrier is classified as being of High Nature Conservation Importance

244. Marsh harriers generally occur near freshwater or brackish marshes and swamps, with extensive areas of dense reeds and rushes. In more recent times the species has shown an adaptation to nest and forage on arable farmland.

245. No marsh harrier nest sites were confirmed within the onshore ornithology study area. However, it is likely that around 2-3 pairs made use of the area in 2018, with activity largely confined to The Fens area of the Sandlings SPA where suitable reedbed habitat exists. No breeding activity is likely to take place west of Aldringham where the habitat is generally less suitable for the species.

6.1.3 Schedule 1 Breeding Birds

6.1.3.1 Cetti's Warbler

246. As a Schedule 1 breeding species, Cetti's warbler is classified as being of Medium Nature Conservation Importance.

247. Cetti's warblers breed in thick vegetation including reedbed margins, willow carr, willowherb and nettles, usually in proximity to water or marshy land. The distribution of the species within the study area in 2018 reflected these preferences, with four of five territories located within The Fens, with a single territory within scrubby habitat at the edge of the Leiston-Aldeburgh SSSI, within the landfall area.

248. No Cetti's warbler territories were recorded within the onshore substation and National Grid infrastructure areas or the onshore cable corridor section of the onshore development area, with habitat generally unsuitable for the species.

6.1.3.2 Barn Owl

249. As a Schedule 1 breeding species, barn owl is classified as being of Medium Nature Conservation Importance.

250. One occupied barn owl nest box was recorded within proximity to the onshore substation and National Grid infrastructure areas in 2018, which would be located in an area of agricultural land that is potentially suitable for barn owl foraging.

6.1.3.3 Dartford Warbler

251. As a Schedule 1 breeding species, Dartford warbler is classified as being of Medium Nature Conservation Importance

252. Dartford warblers are found in heathland with gorse scrub and scattered trees. These habitats within the study area are generally restricted to the Sandlings SPA. The closest territory to the landfall area in 2018 was over 600m away. Approximately four Dartford warbler territories were recorded in 2018, three within the SPA, although a recently fledged family group was recorded to the north of the SPA within 100m of the onshore development area.

253. No Dartford warbler territories were recorded within the onshore substation and National Grid infrastructure areas, with habitat generally unsuitable for the species.

6.1.3.4 Marsh Warbler

254. As a Schedule 1 breeding species found in very low numbers in the UK, marsh warbler is classified as being of High Nature Conservation Importance.

255. Marsh warblers are found in areas of dense vegetation with taller bushes nearby. During baseline surveys, there was one record of a singing male within an area of suitable scrubby breeding habitat at the edge of the Leiston-Aldeburgh SSSI and within the landfall area, which is considered to represent a possible territory. No further breeding evidence was recorded at this location.

256. No marsh warbler territories were recorded within the remainder of the onshore development area, or onshore substation and National Grid infrastructure areas, with habitat generally unsuitable for the species.

6.1.3.5 Yellow Wagtail

257. Yellow wagtail is Red-listed, and the species has been in rapid decline since the early 1980s, with notable range contractions in East Anglia. Britain holds almost the entire world population of the *flavissima* race, so population changes in the UK are of global conservation significance. It breeds in a variety of habitats in the UK, including arable farmland, wet pastures and upland hay meadows.

258. A total of 2-3 pairs were likely to have bred within the onshore ornithology study area in 2018, with records on farmland on the northern edge of the Sandlings SPA in proximity to the onshore development area. No yellow wagtail territories were recorded within the onshore substation and National Grid infrastructure areas within the onshore development area, although habitat may be suitable for the species.

6.1.4 Other Schedule 1 Bird Species

259. No other Schedule 1 bird species were confirmed as breeding within potential disturbance range from the onshore development area, based on the surveys carried out in 2018 (note that Bewick's swan was recorded in the winter period, and the species would most likely be absent during the breeding season). As a result no further detailed mitigation proposals are provided at this stage. The pre-construction surveys detailed below provide the opportunity to establish whether any other Schedule 1 bird species have become established as breeding species along or adjacent to the proposed cable route. Should the presence of additional Schedule 1 species be confirmed during the pre-construction surveys, further targeted mitigation would be proposed and agreed with the Local Planning Authority,

6.2 Embedded Mitigation

260. Embedded mitigation measures are provided in ***Table 6.2*** below. The embedded mitigation measures relate to all bird species listed in ***section 6.1***.

Table 6.2 Embedded Mitigation Relating to Onshore Ornithology

Parameter	Mitigation Measures Embedded into the Project Design
General	
Onshore development area	Refinements to the onshore cable route and location of associated infrastructure have taken place throughout the design and refinement process, taking into consideration the locations of target species' nest sites, and distribution of suitable habitat for target species. The onshore development area has also been designed to reduce interaction within a 200m buffer of the SPA where possible. This is in order to achieve a suitable distance between the designated site and construction works associated with the proposed East Anglia TWO project to minimise disturbance to sensitive ornithological receptors. For further details please refer to ***Chapter 4 Site Selection and Assessment of Alternatives***.
Construction disturbance	A final Code of Construction Practice (CoCP) will be developed for the construction activities and will adhere to construction industry good practice guidance, as secured under the requirements of the draft DCO. This will incorporate a Breeding Bird Protection Plan (BBPP) which will ensure that the nests, eggs and young of any bird species are protected. Detail with regard to mitigation measures and the content of the BBPP is given in the Outline Landscape and Ecological Management Strategy (OLEMS) submitted with this DCO application, as secured under the requirements of the draft DCO.
Habitat reinstatement	Following reinstatement of soil and subsoil, final restoration would commence where possible. Pasture and arable land would be reseeded, fences would be reinstated and suitable hedgerow species replanted. Hedges and any replacement planting would be carried out during the first appropriate planting season following site restoration. In ecologically sensitive areas special restoration may be necessary. Detail is given in the OLEMS submitted with this DCO application, as secured under the requirements of the draft DCO
Landfall	
Designated Sites	The landfall location was influenced from the onset of the project design process by the presence of designated sites, specifically the Leiston-Aldeburgh SSSI. The project has committed to the use of HDD (refer to ***Chapter 6 Project Description***) at the landfall to avoid direct habitat loss within the Leiston-Aldeburgh SSSI at the landfall location, and reduce risks of disturbance to qualifying features using this part of the SSSI. The final landfall construction methodology will be detailed within the Landfall Construction Method Statement produced post-consent to discharge the requirements of the DCO.
Onshore Cable Corridor	
Designated Sites	The route of the onshore cable corridor was influenced from the onset of the project design process by the location of designated sites, specifically The Sandlings SPA and component Leiston-Aldeburgh SSSI. The project design minimises the overlap of the onshore cable corridor with these designated sites, choosing a crossing at the narrowest point. The crossing point of the Sandlings SPA was further chosen as it is currently being used as a horse paddock and not

Parameter	Mitigation Measures Embedded into the Project Design
General	
	considered optimal habitat compared to the wider Sandlings SPA which is avoided. Where the onshore cable corridor crosses these designated sites, an open cut crossing technique is the preferred crossing methodology. The Applicant will not undertake onshore cable route construction works to cross the Sandlings Special Protection Area (SPA) / Leiston – Aldeburgh Site of Special Scientific Interest (SSSI) within the SPA/SSSI boundary or associated crossing works within 200m of the SPA/SSSI boundary during the breeding bird season unless otherwise agreed with Natural England that bird breeding activities within 200m of the SPA/SSSI crossing works area have ceased. The timing of this seasonal restriction will be based on monitoring information provided by the Ecological Clerk of Work (likely to be mid-February to end of August) Open trench works associated with crossing the SPA (including associated crossing works within 200m of the SPA boundary) will be undertaken within approximately three months of excavation works commencing (comprising approximately one month within the boundary of the SPA and approximately two months within 200m of the boundary of the SPA). HDD works associated with crossing the SPA (including the establishment and subsequent removal of HDD entry pit and exit pit working areas) will be undertaken over a two year period with works limited to up to six months per year due to the seasonal restriction. Landscaping works such as hedgerow replanting may be undertaken outside these periods to ensure optimal planting conditions are achieved.
National Grid Substation and Onshore Substation	
Habitat loss	The potential loss of woodland habitat for birds was identified early in the project design process, and therefore the locations of substations are positioned so as to minimise woodland removal, in an area of arable farmland, which is of lower conservation value for target species.

6.3 Additional Mitigation

6.3.1 Pre-construction

261. Measures would be undertaken to minimise the likelihood of disturbance injury or mortality of breeding birds, their nests, eggs and chicks. Wherever possible, vegetation which would be directly impacted by construction and that could be used by nesting birds would be removed outside of the mid-February to August (inclusive) bird nesting season (particularly sections of hedgerow, scrub, tree lines and woodland) although good practice would be to remove any vegetation outside of February to September to avoid early or late breeding attempts.

262. At locations where scrub, tree or woodland removal during the breeding season is unavoidable, surveys would be undertaken immediately prior to habitat removal to confirm that there are no occupied nests.

263. If complete removal of the trees, scrub and vegetation is not feasible, then they should be heavily pruned to reduce the amount of nesting cover for breeding birds where compliant with other mitigation measures. Pruning would occur prior to the bird-nesting season.

264. Should any occupied nests be identified an appropriate buffer zone (determined on the basis of the species concerned and the location of the nest in the context of the surrounding vegetation, but no less than 5 m) would be retained until it can be ascertained that the chicks have fledged.

265. Pre-construction surveys will be targeted at Schedule 1 breeding species, due to the additional legal requirement of avoiding disturbance to breeding birds on or near a nest.

6.3.2 Construction

266. If an active nest is identified during the works, it must be protected until the young have fledged, or breeding activity has otherwise ceased. Works in the area should halt and a suitably qualified ecologist or ECoW should be contacted to advise on appropriate mitigation. This might involve retaining a buffer zone around the nest of 5-25m dependent on the species involved (Schedule 1 species would need a separate plan due to greater potential range of disturbance distances) and the location of the nest. Although general ranges of exclusion can be determined for species types, for example, a ground nesting species would require a greater exclusion due to having less cover, it is not possible to give specific distances per species, as this is site-specific, e.g. dependent on the level of visual screening around the nest.

267. When undertaking construction works (excluding personnel and vehicle use of haul roads) within 200m of the SPA Boundary during the breeding bird season (generally mid-February to September, inclusive) the following examples of mitigation measures may be employed:

- For works inside or within 200m of the SPA and SSSI boundary, the BBPP will highlight the risks to breeding birds and detail measures to ensure the protection of their nests.
- Pre-construction bird surveys will be undertaken to establish the presence of breeding birds;
- Measures will be adopted to minimise noise, light and disturbance on identified breeding birds, such as visual screening (e.g. opaque fencing) where necessary;
- Construction activities would be monitored by an ECoW or suitably qualified ornithologist, who would seek to ensure compliance with the Wildlife and

Countryside Act 1981 by avoiding destruction of nests, eggs or young, and affording increased protection from disturbance to Schedule 1 species breeding birds; and

- Where breeding bird activity within the SPA is recorded within 200m of construction works, such construction works would be halted immediately until a disturbance risk assessment is undertaken by a suitably qualified ecologist. The risk assessment would consider the nature of construction activity, likelihood of disturbance, and possible implications of the construction activities on the breeding attempt and set out measures to ensure that no disturbance occurs. Where it is determined that breeding birds are not likely to be affected, construction works will continue. Where it is determined that breeding birds may be affected, additional mitigation works will be implemented to prevent disturbance. Where, in the opinion of the suitably qualified ecologist, disturbance cannot be avoided by mitigation, construction works within the area of disturbance will be suspended until chicks have fledged.

6.3.3 Post-Construction

268. On completion of construction, the land would be reinstated, farmland returned to agricultural practice and other areas would be reinstated in accordance with provisions in this OLEMS.

6.3.4 Targeted Management

269. This section details additional mitigation proposed as relevant to the species listed below.

6.3.4.1 Turtle Dove

270. In response to possible loss of turtle dove foraging habitat identified in ***section 26.3.1.3*** of ES ***Chapter 23 Onshore Ornithology***, a location within the onshore development area 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. This supplementary feeding area has in recent years been used for arable and pig farming, and based on advice provided by Operation Turtle Dove initiative [https://www.operationturtledove.org], is located within 300m of previously recorded turtle dove territories, in an open location adjacent to field boundaries, and also in proximity to water (the agricultural reservoir). It would comprise a strip of land measuring a minimum 50m long by 5m wide, or similar.

271. Management would commence prior to construction so that the habitat would be available before any existing habitat is lost. During the construction period, supplementary feeding would be carried out from mid-April until late June, or until

turtle dove breeding activity is known to have ceased in July. The feeding area would be prepared to comprise a bare surface free of vegetation, or have vegetation that is short (<15cm) and patchy, including at least 30% (preferably 50-60%) bare areas in April. The feeding area would be subject to cutting or use of a rotovator if the vegetation subsequently covered all the ground and became taller than 25cm before the end of the feeding period in late June. A mix of suitable seed types as advised by Operation Turtle Dove would be sown weekly.

272. The BBPP would ensure that no nesting birds are disturbed by construction. In addition to nesting birds, the site identified for supplementary turtle dove feeding outlined would also be subject to ongoing monitoring as part of the BBPP, and measures would be undertaken that feeding birds in this area are not disturbed by construction activities. It would be ensured that any habitats of conservation value which would be subject to temporary loss are reinstated post-construction in agreement with Natural England.

6.3.4.2 Nightingale

273. Habitat suitable for nightingale within the SPA/SSSI, and within the onshore development area, would be managed following recommended guidelines (e.g. British Trust for Ornithology (BTO) 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. This management would commence prior to the breeding season that overlaps with construction activities to provide the best opportunity for nightingales to utilise the habitat, so that birds displaced by construction works are not lost from the SSSI population. The management would continue through the duration of construction, until any suitable nightingale habitat which would be subject to temporary loss is reinstated post-construction.

274. The BBPP would ensure that no nesting birds are disturbed by construction. It would be ensured that any habitats of conservation value which would be subject to temporary loss are reinstated post-construction in agreement with Natural England.

275. 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.

6.3.4.3 Barn Owl

276. 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 in the onshore substation and National Grid infrastructure areas.

277. The BBPP would ensure that no nesting birds are disturbed by construction. It would be ensured that any habitats of conservation value which would be subject to temporary loss are reinstated post-construction in agreement with Natural England.

6.3.4.4 Bewick's Swan (non-breeding)

278. If construction activities are due to take place within 200m of Hawsell's Farm (Compartment 7 of ***Figure 23.11 of Chapter 23 Onshore Ornithology***) during the midwinter period (November to February), the following mitigation measures would be considered.

- Bird surveys will be undertaken prior to commencement of works in this area to establish the presence of wintering Bewick's swan;
- Measures will be adopted to minimise noise, light and disturbance on identified areas (Compartment 7), such as visual screening (e.g. opaque fencing) where necessary; and
- Construction activities would be monitored by an ECoW or suitably qualified ornithologist, who would determine whether any further mitigation measures are required to avoid disturbance.

6.4 Breeding Bird Protection Plan (BBPP)

6.4.1 Aims and Objectives

279. The aim of the BBPP is to ensure all reasonable precautions are taken by the Applicant and their contractors to protect birds and their nests, eggs, and dependent young during the construction and decommission of the proposed East Anglia TWO project.

280. The aim will be fulfilled by the Applicant adopting the following objectives:

- Objective A: Implement a bird monitoring plan;
- Objective B: Follow an approved procedure if an active nest is found;

- Objective C: If required, implement measures prior to the breeding season to discourage birds from breeding on those areas of the onshore development area to be worked during construction; and
- Objective D: Ensure adequate education and awareness of site personnel.

281. The procedures to be adopted that will fulfil these objectives are detailed in ***section 6.4.5***.

6.4.2 Responsibilities

282. The overall responsibility for ensuring that the DCO requirements and the conditions of any licence granted are adhered to, in particular those conditions relating to protected species, will rest with the Applicant. The personnel responsible for the day-to-day implementation of the BBPP are detailed in ***Table 6.3*** below.

6.4.3 Role of the Ecological Clerk of Works (ECoW)

283. The ECoW would monitor the procedures outlined within the BBPP. Among other duties, the ECoW will have the responsibility of monitoring compliance with the BBPP during the construction and decommissioning phases and reporting any breaches to the principal contractor and the Applicant. The ECoW's role would involve direct monitoring of all activities within the onshore development area to the extent the ECoW considers this to be required and/or training of nominated personnel to carry these activities out in a manner likely to minimise the potential for adverse impacts. Responsibilities are detailed in ***Table 6.3.***

284. During the construction and decommissioning phases, where there is any departure from the BBPP, then the ECoW would be entitled to prescribe such action(s) (including immediate cessation of the relevant tasks/works/operations) that will be implemented by the Applicant or any contractors. The Applicant, or their contractors, would be given reasonable notice to react to the ECoW's instruction. Exceptions will be made in the case of an emergency.

Table 6.3 BBPP Responsibilities

Task	Responsibility
Implementation of the BBPP	Principal contractor
Monitoring and review of the BBPP	Ecological Clerk of Works
Regular site monitoring for potential nesting birds	Ecological Clerk of Works or a suitably qualified ecological surveyor
On-going watching brief for potential nesting birds	All site personnel

Task	Responsibility
Education of site personnel	Principal contractor, supported by Ecological Clerk of Works

6.4.4 The Potential Impacts of the Development

285. The potential impacts on breeding birds from the construction of the proposed East Anglia TWO project include both direct and indirect impacts. Direct impacts include the physical impacts of construction such as digging of cable trenches, soil stripping and vegetation clearance. Indirect impacts include visual or noise disturbance of nesting birds by construction activities.

286. Any of these construction works can negatively impact or affect breeding birds in a variety of ways, including:

- Abandonment of breeding attempt;
- Abandonment of nest building;
- Abandonment of nest site;
- Damage to, or loss of, the nesting site;
- Abandonment of brooding;
- Abandonment of chick feeding;
- Damage to foraging area; or
- Damage to the parent birds.

6.4.5 Procedures for Protecting Birds

287. In addition to the seasonal restriction presented in ***section 6.2*** of this document which has been adopted by the Applicant to protect the integrity of the SPA, this section details the procedures to be followed to ensure the aim and objectives of the BBPP are achieved and that reasonable precautions have been taken to protect birds and their nests, eggs, and dependent young during the construction and decommissioning of the proposed East Anglia TWO project.

6.4.5.1 Objective A – Monitoring Plan

288. Throughout the breeding bird season, the undernoted bird surveying will be conducted during the construction period to inform the ongoing monitoring and protection strategy.

6.4.5.2 Schedule 1 Birds

289. Regular monitoring of the onshore development area plus a buffer of up to 400m where suitable habitat exists, for Schedule 1 birds will be conducted by the ECoW, or suitably qualified ornithologist, during construction.

6.4.5.3 All Wild Birds

290. Spot-check surveys will be conducted within the onshore development area by the ECoW to check for nest sites of any wild bird. These surveys will be conducted in all areas which may be potentially affected by construction and which may host any wild breeding bird and should commence between 1 and 2 weeks in advance of construction activity. This procedure will allow any necessary micrositing of the infrastructure or creation of disturbance buffers to be agreed in advance of construction commencing.

291. Ongoing monitoring of breeding bird activity will be undertaken by the ECoW during construction to ensure any changes in breeding bird activity are recorded and the protection plan updated as required.

6.4.5.4 Objective B – Procedure if Active Nest Site is Found

6.4.5.4.1 Schedule 1 Birds

292. If a nest site of a Schedule 1 species is found the undernoted procedure will be followed:

- A preliminary 400m buffer zone around the nest site will be established immediately;
- This area will be clearly identifiable, e.g. demarcated with barrier tape, and the appropriate personnel informed;
- A disturbance risk assessment will then be completed (by the ECoW in consultation with a suitably qualified ornithologist if required) to assess site-specific factors that may either enhance or reduce the risk of disturbance (topography, land-cover etc.). This will also consider relevant guidance (e.g. Ruddock and Whitfield, 2007). This may result in a decrease or increase in the size of the buffer zone;
- Natural England and the Local Planning Authority will be consulted on the disturbance risk assessment before any alterations are made to the 400m buffer zone; and
- No construction activity which may have any of the effects noted in ***Section 6.4.4***, will be allowed to commence or continue until the ECoW or a suitably qualified ornithologist confirms that it is acceptable to do so on the advice of Natural England and the Local Planning Authority. This will be based on the results of nest site monitoring.

293. This procedure should also be considered if a nest site is found for species listed on Annex I of the EU Birds Directive (but not Schedule 1) as although these species are not legally protected from disturbance, implementation of this procedure will help ensure that the conservation status of these species is not

adversely affected by disturbance. Specific buffer distances would be based on published guidance, where available (e.g. Ruddock and Whitfield 2007).

6.4.5.4.2 All Wild Birds

294. If a nest of a wild bird is found, that is not listed in Schedule 1, the following procedure will be followed:

- A 30m buffer zone around the nest site will be established immediately;
- This area will be clearly identified, e.g. demarcated with barrier tape, and the appropriate personnel informed; and
- No construction activity which may have any of the effects noted in Section 6.4.4 will be allowed until the ECoW, or a suitably qualified ornithologist, confirms that the nest is no longer in use by breeding birds.

6.4.5.4.3 Personnel Discovering Active Nest

295. In the event of site personnel discovering an active nest site the following procedure must be followed:

- All works within 30m of the identified nest must be stopped (excluding personnel and vehicle use of haul roads) until the ECoW is able to attend. If the species nesting is suspected to be a Schedule 1 species, no works must be undertaken within 400m until the ECoW is able to attend;
- The ECoW should be contacted;
- The location should be checked by the ECoW or suitably qualified ornithologist to determine if an active nest is present; and
- If an active nest site is present then the appropriate procedure laid down in Objective B above should be followed.

6.4.5.5 Objective C – Measures to Discourage Birds from Breeding on Those Areas of the site to be Worked During Construction

296. A mechanism to allow micrositing of infrastructure will minimise the risks of development to breeding birds. The flexibility afforded by this mechanism, in combination with the bird monitoring noted in Objective A, will be used by the ECoW to develop measures that will avoid and minimise impacts on breeding birds.

297. If no alternative options are available, deterrent measures to prevent birds from nesting in known construction locations will be considered with reference to relevant guidance (e.g. SNH, 2016). The requirement for such measures will be based on the results of surveys and previous known nest site locations in relation to construction areas. SNH (2016) advises against physical removal or alteration

of habitat (e.g. pruning of trees or shrubs) because of possible direct and indirect adverse impacts on other environmental interests, and so this option will be avoided if possible.

298. Any deterrent measures must commence before nest building begins, well in advance of the likely start of egg laying. If nest-building activity is observed, continued deterrence will cease immediately.

299. Once established, the success of the technique(s) will be monitored.

6.4.5.6 Objective D – Education and Awareness

300. The BBPP will be detailed during the formal induction given to all site personnel (including contractors and subcontractors).

301. The Principal Contractor will be made aware of legal status of the breeding birds within the onshore development area. This transfer of information will be undertaken by the Applicant. The Applicant and the principal contractor will provide the necessary education as part of a formal induction to all site personnel with regard to the objectives of the BBPP. In particular, the actions that should be taken if breeding birds are seen will be explained in detail.

302. In addition to the Principal Contractor, the ECoW will meet the relevant contractors before they commence with the proposed East Anglia TWO project to provide contact details and inform them of the presence of any breeding birds in the areas of the onshore development area in which they must be vigilant.

303. The Applicant will undertake that any person found to be disregarding the terms of the BBPP is immediately expelled from the construction site until such time that it is appropriate for them to be allowed to return following a period of re-training. Such persons will need to undertake re-training in the use and application of the BBPP to ensure the impact on breeding birds is avoided or minimised.

304. The ECoW will meet regularly with relevant contractors working on the proposed East Anglia TWO project to gather information on possible breeding bird sightings.

6.4.6 Non-breeding Season Protection Procedures

305. If construction activities are due to take place within 200m of survey Compartment 7 at Hawsell's Farm (***Figure 23.11***) during the midwinter period (November to February), the following measures would be employed:

- Bird surveys would be undertaken prior to commencement of construction activities to establish the presence of wintering Bewick's swan, as recorded in Compartment 7 during baseline surveys in 2018-19;
- If present, a 200m buffer zone around Compartment 7 would be established immediately;
- This area would be clearly identified, e.g. demarcated with barrier tape, and the appropriate personnel informed;
- No construction activity which may have the potential for disturbance to Bewick's swans would be allowed until the ECoW, or a suitably qualified ornithologist, confirms that the site is no longer in use by Bewick's swan;
- Measures to minimise noise, light and disturbance, such as visual screening (e.g. opaque fencing) may be adopted where necessary, to allow commencement of construction activities within 200m, should an agreement be reached with the ECoW; and
- Construction activities would be monitored by an ECoW or suitably qualified ornithologist, who would determine the duration and extent of any restrictions to construction activities, and whether any further mitigation measures are required to avoid disturbance.

7 Timings of Ecological Surveys

306. ***Table 7.1*** provides a summary of further ecological surveys and timeline programme for ecological works required in advance of and to support the construction of the proposed East Anglia TWO project onshore infrastructure, along with site preparation works, construction, post-construction and long term management for the East Anglia TWO onshore infrastructure. A more detailed programme of ecological works will be included with the EMP, following the completion of the pre-construction surveys.

Table 7.1 Seasonal Timings for Surveys

Receptor	Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tree Survey	Pre construction survey												
Vegetation (including invasive species)	Pre construction survey												
Badger	Pre-construction survey												
	Pre-construction exclusion (under licence)												
Bats	Pre-construction bat activity survey												
	Potential tree roost inspection												
	Post construction bat activity survey												
Great crested newts	Pre-construction survey												
	Pre-construction translocation (under licence)												
	Post-construction survey												
	Pre-construction displacement / translocation												
Reptiles	Pre-construction survey												
	Pre-construction capture and release												
Wintering Birds	Survey												
Breeding Birds	Survey												
	Vegetation Clearance												

8 Mitigation Measures During Operation

307. During any required inspections and/or routine maintenance work, best practice procedures would be followed and be in accordance with the relevant standards at that time. If intrusive works were required at any point, an ecologist would be contacted to assess whether there are any impacts associated with the work, before that work can proceed.

308. An Artificial Light Emissions Management Plan will be developed for the final design for the permanent infrastructure, as secured under the relevant requirement of the draft DCO, which will include measures to minimise light spill and be designed in line with the 'Bats and Artificial Lighting in the UK' guidance (BCT 2018).

309. Operational noise impacts for the onshore substation and National Grid substation are discussed within the ***Chapter 22 Onshore Ecology, Chapter 23 Onshore Ornithology and Chapter 25 Noise and Vibration*** of the ES, as relevant.

9 Monitoring

310. The mitigation measures described above will be monitored by the Contractor's environmental management representative and the ECoW throughout the construction phase of the proposed East Anglia TWO project.

311. The requirement for, and final appropriate design and scope, of monitoring will be agreed with the Local Planning Authority and included within the relevant management plan(s), submitted for approval to discharge relevant DCO requirements, prior to construction works commencing.

312. Mitigation monitoring programmes could be established for some habitats and species following completion of construction works where required. Monitoring surveys would be discussed and agreed with the Local Planning Authority and included within the relevant management plan(s), submitted for approval to discharge relevant DCO requirements, prior to construction works commencing.

10Ecological Management Plan

313. An Ecological Management Plan (EMP) would be implemented during construction of the East Anglia TWO onshore infrastructure, in accordance with the OLEMS, under the relevant requirement of the draft DCO which requires the submission of an EMP to be submitted post-consent to and approved in writing by the relevant Local Planning Authority prior to commencement of construction. The EMP would act as a live document, to be referenced throughout construction works on the site, to ensure the protection of the species detailed below.

314. The EMP will also include method statements to ensure that all potential ecological impacts are appropriately mitigated. Method statements secured as part of the EMP are:

- Breeding Bird Protection Plan;
- Arboricultural Method Statement;
- Invasive Species Method Statement; and
- SPA Crossing Method Statement.

315. As part of the EIA process, ecological surveys were commissioned. These surveys confirmed the presence of:

- Great crested newt;
- Bat species;
- Badger; and
- Schedule 1 Breeding Birds.

10.1 Background

316. Impacts on protected species can result from the physical effects of construction such as soil stripping, haul road laying, HDD, trench digging, building construction and noise disturbance. These construction activities can negatively affect protected species in a number of ways including:

- Abandonment of a roost/sett/nest due to disturbance;
- Abandonment of dependant young due to disturbance;
- Damage to a protected site;
- Damage to navigation routes (i.e. hedgerows, ditches, burns, fence lines etc);
- Fragmentation of territories;
- Damage to forage areas or wildlife corridors;

- Contamination of water; and
- Accidental injury or death to species by machinery, tools or vehicles.

317. Below is an outline of the legislation that affords protection to the aforementioned species. It should be noted that regulations might change.

318. European Protected Species (EPS) afforded protection under The Conservation of Habitats and Species Regulations 2017 include great crested newt and bats. Protection afforded under this regulation makes it an offence for anyone to deliberately capture, injure or kill any such animal. Their breeding sites or resting places are protected under Regulation 41.

319. All native reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to kill, injure or sell any of the six, native species.

320. Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett with a sett defined as “any structure or place which displays signs indicating current use by a badger”.

321. Schedule 1 species are afforded additional protection under the Wildlife and Countryside Act 1981 (as amended) meaning they are protected at all times and it is an offence to intentionally or recklessly disturb individuals at, on or near an ‘active’ nest.

10.2 Responsibilities

322. The Applicant’s ECoW would take on the responsibility of Ecological Clerk of Works on the East Anglia TWO onshore infrastructure construction.

323. All of the ecological work described in the EMP would be undertaken under the guidance of the Applicant’s ECoW

324. The Contractors role includes ensuring that all measures that are set out within the EMP are adhered to during construction. Support and monitoring would be provided by the Applicant’s ECoW. However, responsibility for compliance with the measures sits with the Contractors and their appointed environmental representatives (i.e. the Contractors ECoW).

325. The Applicant’s ECoW would be responsible for the following activities:

- Monitoring Contractors’ compliance with the EMP during construction;
- Arranging specialist environmental surveys;

- Undertaking necessary pre-construction checks for legally protected or notable species;
- Undertaking ecological supervision during the implementation of ecological mitigation outlined in this EMP;
- Undertaking regular environmental inspections of Works; and
- Assisting (where deemed necessary by the Contractors or the Employer) in site inductions and toolbox talks and help to review Risk Assessments and Method Statements (RAMS).

326. All site workers would be informed of the role and contact details of the Applicant's ECoW. A copy of the EMP would be kept on site at all times and site workers would be made aware of its location and/or who to contact in order to obtain a copy of the EMP.

327. The site-wide ecological requirements would be explained to all construction personnel, however additional toolbox talks would also be provided prior to construction commencing in certain area of the East Anglia TWO onshore infrastructure to ensure that area-specific requirements are fully understood and implemented.

328. Any known breaches of the requirements documented within the EMP would be reported to the Applicant's ECoW by the Site Manager or site workers (either directly or through the Site Manager). It is the Applicant's ECoW's responsibility for reporting a breach of the requirements of the EMP to the the Applicant and Contractors' Site Manager and, where necessary, to the relevant Local Planning Authority and/or Natural England. Reporting of pollution incidents would be done directly to the Environment Agency Incident Hotline.

329. The Applicant's ECoW would be responsible for developing an appropriate ecology and nature conservation response strategy for any breach of the EMP as soon as practicable. The Applicant's ECoW would ensure that any remedial measures proposed are approved by the Local Planning Authority and where appropriate Natural England, prior to them being carried out on site.

10.3 Licence Requirements

330. During the construction of East Anglia TWO onshore infrastructure all reasonable precautions would be adopted to protect protected species from disturbance, injury and death and to protect any structure or place that any such species uses for breeding, resting, shelter or protection.

331. A great crested newt mitigation licence will be sought from Natural England, and, following further discussion and the results of pre-construction surveys, the local

badger population will also be assessed for the requirement for a mitigation licence.

11 Summary

332. This OLEMS has been drafted in order to provide a framework for the EMP and LMP to be submitted prior to construction of the proposed East Anglia TWO project, as secured under the requirements of the draft DCO.

333. This OLEMS has summarised the landscape and ecological mitigation and enhancement measures which have been proposed within the ES. The OLEMS also details the procedures which have been proposed for ensuring monitoring of and compliance with these measures.

12 References

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Annex 1: Hedgerow Schedule

Reference of hedgerow on Important Hedgerows and Tree Preservation Order Plan (document reference 2.10)	Sheet number on Important Hedgerows and Tree Preservation Order Plan (document reference 2.10)	Type of interaction with important hedgerow
1	1	Full or partial removal
2	1	Full or partial removal
3	1	Full or partial removal
4	2	Crossed with a reduced working width
5	2	Crossed with a reduced working width
6	2	Crossed with a reduced working width
7	2	Crossed with a reduced working width
8	3	Crossed with a reduced working width
9	3	Crossed with a reduced working width
10	3	Full or partial removal
11	3	Full or partial removal
12	3	Full or partial removal
13	3	No interaction
14	4	Crossed with a reduced working width
15	4	Crossed with a reduced working width
16	4	Crossed with a reduced working width / No interaction
17	4	Crossed with a reduced working width
18	4	Crossed with a reduced working width
19	5	Full or partial removal
20	5	Crossed with a reduced working width
21	5	Crossed with a reduced working width
22	5	Crossed with a reduced working width
23	5	Crossed with a reduced working width
24	5	Crossed with a reduced working width

Reference of hedgerow on Important Hedgerows and Tree Preservation Order Plan (document reference 2.10)	Sheet number on Important Hedgerows and Tree Preservation Order Plan (document reference 2.10)	Type of interaction with important hedgerow
25	6	No interaction
26	6	Full or partial removal
27	6	Full or partial removal
28	6	No interaction
29	6	Crossed with a reduced working width
30	6	Crossed with a reduced working width
31	6	Crossed with a reduced working width
32	6	Crossed with a reduced working width
33	6	No interaction
34	6	No interaction
35	7	Full or partial removal
36	7	Full or partial removal
37	7	Full or partial removal
38	7	Landscape mitigation
39	7	Landscape mitigation
40	7	Landscape mitigation
41	7	Landscape mitigation
42	7	Landscape mitigation
43	7	Landscape mitigation
44	7	Landscape mitigation
45	7	Landscape mitigation
46	7	Landscape mitigation
47	7	Landscape mitigation
48	7	Landscape mitigation
49	7	Landscape mitigation
50	7	Landscape mitigation

Reference of hedgerow on Important Hedgerows and Tree Preservation Order Plan (document reference 2.10)	Sheet number on Important Hedgerows and Tree Preservation Order Plan (document reference 2.10)	Type of interaction with important hedgerow
51	7	Landscape mitigation
52	7	No interaction
53	7	Full or partial removal
54	7	No interaction
55	8	Full or partial removal
56	8	Full or partial removal
57	8	Full or partial removal
58	8	No interaction
59	7	Full or partial removal
60	9	Full or partial removal
61	9	Full or partial removal
62	9	Full or partial removal
63	9	Full or partial removal
64	9	Full or partial removal
65	9	Full or partial removal

Annex 2: Figures

N

Redhouse Farm

Owl's Hole

Friston Moor

Moor Farm

Friston House

Clay Pit

Sand Pit

Laurel Covert

Old World Wood

The Grove

Pear Tree Farm

Historic Field Boundaries (no longer present)

Historic Footpaths (no longer present)

Historic Field Boundaries (still present)

Historic Footpaths (still present)

Single Tree or Line of Trees shown on Historic Map

Onshore Development Area Boundary

SCOTTISHPOWER RENEWABLES	4	23/05/2019	mb	Fourth Issue.			1:2,500 Scale @ A1
	3	03/05/2019	mb	Third Issue.	Prepared:	mb	0 125 250 m
	2	02/04/2019	mb	Second Issue.	Checked:	sm	
	Rev	Date	By	Comment	Approved:	lt	

East Anglia TWO

Historic Map Context

(1st edition Historic OS map 1883/84)

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS	
Rev	4	Coordinate System: BNG Datum: OSGB36
Date	23/05/19	
Figure	1	

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SCOTTISHPOWER RENEWABLES

Rev	Date	By	Comment
5	03/06/2019	mb	Fifth Issue.
4	23/05/2019	mb	Fourth Issue.
3	03/05/2019	mb	Third Issue.

Prepared: mb
Checked: sm
Approved: lt

1:4,000 Scale @ A1

0 200 400 m

East Anglia TWO

Baseline site context

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS		
Rev	5	Coordinate System: BNG Datum: OSGB36	
Date	03/06/19		
Figure	2		

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N

Redhouse Farm

Fristonmoor

Little Moor Farm

Fareacres

School Road

Peartree Farm

Laurel Covert

Old World Wood

Grove Wood

Moor Farm

Friston House

Saxmundham Road

Grove Road

NGET

EA2

EA1N

G1 G2 G3 G4 W1 W2 W3 W4

Onshore Development Area Boundary
Existing Overhead lines
Overhead lines realignment
Existing contours and spot-heigths
Pylon
Existing / Diverted Public Rights of Way
Permanent Access Road
Proposed SUDS Detention basins

Existing Hedgerows / linear tree belts
Existing Woodland
G1 Amenity grass seed mix for embankments and verges
G2 Species rich grassland seed mix areas
G3 Wetland grassland seed mix areas
G4 Area for potential future surface water management
Gappy Hedgerow reinstatement
Proposed Hedgerow planting
W1 Proposed Pre-Construction Core Woodland
W2 Proposed Pre-Construction Edge Woodland
W3 Proposed Pre-Construction Screen Woodland
W4 Proposed Wet Woodland
W1 Proposed Post-Construction Core Woodland
W2 Proposed Post-Construction Edge Woodland
W3 Proposed Post-Construction Screen Woodland
Individual Tree Planting along Hedgerows

SCOTTISHPOWER RENEWABLES

Rev	Date	By	Comment
8	21/08/2019	mb	Eighth Issue.
7	13/08/2019	mb	Seventh Issue.
6	24/07/2019	th	Sixth Issue.

Prepared: mb
Checked: sm
Approved: lt

1:2,500 Scale @ A1

0 125 250 m

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Onshore Substations, National Grid Infrastructure and Cable Sealing End Compound is illustrated without shadow effects.

East Anglia TWO

OLMP General Arrangement

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS
Rev	8
Date	21/08/19
Figure	3

Coordinate System: BNG Datum: OSGB36

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SCOTTISHPOWER RENEWABLES	8	21/08/2019	mb	Eighth Issue.			1:4,000 Scale @ A1	0 200 400 m
	7	13/08/2019	mb	Seventh Issue.	Prepared:	mb		
	6	24/07/2019	th	Sixth Issue.	Checked:	sm	This map has been produced to the latest known information at the time of issue, and has been produced for your information only. Please consult with the SPR Offshore GIS team to ensure the content is still current before using the information contained on this map. To the fullest extent permitted by law, we accept no responsibility or liability (whether in contract, tort (including negligence) or otherwise in respect of any errors or omissions in the information contained in the map and shall not be liable for any loss, damage or expense caused by such errors or omissions.	
	Rev	**Date**	**By**	**Comment**	Approved:	lt	Onshore Substations, National Grid Infrastructure and Cable Sealing End Compound is illustrated without shadow effects.	

East Anglia TWO

OLMP Illustrative Plan (Overview scale)

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS	
Rev	8	Coordinate System: BNG Datum: OSGB36
Date	21/08/19	
Figure	4	

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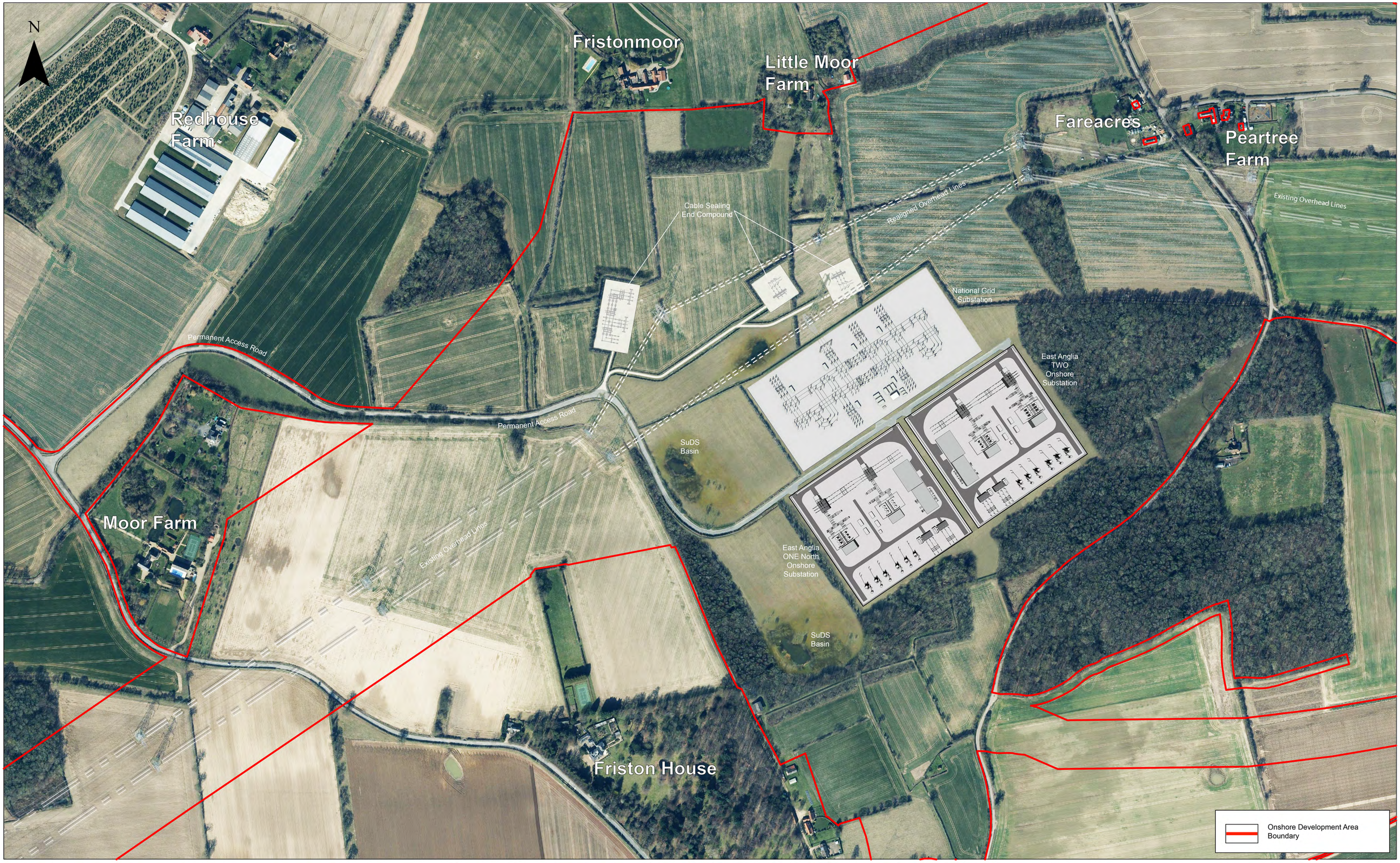

Rev	Date	By	Comment
8	21/08/2019	mb	Eighth Issue.
7	13/08/2019	mb	Seventh Issue.
6	25/07/2019	th	Sixth Issue.

Prepared: mb
Checked: sm
Approved: lt

1:2,500 Scale @ A1

0 125 250 m

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East Anglia TWO

OLMP Illustrative Plan

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS	
Rev	8	Coordinate System: BNG Datum: OSGB36
Date	21/08/19	
Figure	5	

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SCOTTISHPOWER RENEWABLES

Rev	Date	By	Comment
6	21/08/2019	mb	Sixth Issue.
5	03/06/2019	mb	Fifth Issue.
4	23/05/2019	mb	Fourth Issue.

Prepared: mb
Checked: sm
Approved: lt

1:2,500 Scale @ A1

0 125 250 m

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East Anglia TWO

OLMP Proposed Planting Plan

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS	
Rev	6	Coordinate System: BNG Datum: OSGB36
Date	21/08/19	
Figure	6	

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SCOTTISHPOWER RENEWABLES

Rev	Date	By	Comment
7	21/08/2019	mb	Seventh Issue.
6	24/07/2019	th	Sixth Issue.
5	03/06/2019	mb	Fifth Issue.

Prepared: mb
Checked: sm
Approved: lt

1:2,500 Scale @ A1

0 125 250 m

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Onshore Substations, National Grid Infrastructure and Cable Sealing End Compound is illustrated without shadow effects.

East Anglia TWO

OLMP Timing of Planting

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS	
Rev	7	Coordinate System: BNG Datum: OSGB36
Date	21/08/19	
Figure	7	

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N

Proposed Diversion of Public Right Of Way

Existing Retained Public Right Of Way

Onshore Development Area Boundary

SCOTTISHPOWER RENEWABLES

Rev	Date	By	Comment
7	21/08/2019	mb	Seventh Issue.
6	24/07/2019	th	Sixth Issue.
5	03/06/2019	mb	Fifth Issue.

Prepared: mb
Checked: sm
Approved: lt

1:4,000
Scale @ A1

0 200 400 m

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East Anglia TWO

OLMP Public Right of Way

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS
Rev	7
Date	21/08/19
Figure	8

Coordinate System: BNG
Datum: OSGB36

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N

Redhouse Farm

Fristonmoor

Little Moor Farm

Fareacres

Peartree Farm

Cable Sealing End Compound

Realigned Overhead Lines

Existing Overhead Lines

Permanent Access Road

Permanent Access Road

National Grid Substation (GIS)

East Anglia TWO Onshore Substation

SuDS Basin

East Anglia ONE North Onshore Substation

SuDS Basin

Moor Farm

Existing Overhead Lines

Friston House

Onshore Development Area Boundary

Rev	Date	By	Comment
2	13/09/2019	mb	Second Issue.
1	01/08/2019	mb	First Issue.

Prepared: mb
Checked: sm
Approved: lt

1:2,500 Scale @ A1

0 125 250 m

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East Anglia TWO

OLMP Illustrative Plan (GIS)

Doc Ref	EA2-DEVWF-ENV-REP-IBR-OLEMS
Rev	1
Date	01/08/19
Figure	9

Coordinate System: BNG
Datum: OSGB36

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