Preliminary Environmental Information Report Volume 1

Chapter 8 Ecology and Biodiversity

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Contents

Glossary of Project Terminology

This Glossary has been provided to define terms used across a number of the LionLink Proposed Scheme documents. Abbreviations contained herein are provided at the end of the document in the **Topic Glossary and Abbreviations.**

Term	Description
Amendment to Kiln Lane Substation Scenario	The scenario where the Proposed Scheme will comprise the amendments to Kiln Lane Substation that would be required if Kiln Lane Substation was built out pursuant to the EA1N/EA2 DCOs.
Applicant, the	National Grid Lion Link Limited (NGLLL)
Bellmouth	A flared vehicular access/egress point connecting permanent route to the public highway.
Converter Station	A converter station changes electricity between High Voltage Alternating Current (HVAC), which power our homes, and High Voltage Direct Current (HVDC) which is more efficient for transporting electricity over long distances and vice versa. The proposed Converter Station is located to the east of Saxmundham.
Converter Station Site	The Converter Station Site as a whole, allowing for the co-location of the Converter Station with the Converter Station being separately consented as part of the Sea Link project.
Co-ordination	The process of people or entities working together.
Co-location	Where different elements of a project, or various projects, are located in one place.
Construction Compound	Temporary compounds installed during the construction phase of the Proposed Scheme. Each compound is likely to contain storage areas such as laydown areas, soils storage, and areas for equipment and fuel, drainage, generators, car parking and offices and welfare areas (portacabins).
Development Consent Order (DCO)	An order made by the Secretary of State pursuant to the Planning Act 2008 (as amended) granting development consent for a Nationally Significant Infrastructure Project. It grants consent to develop the approved project and may include (among other things) powers to compulsorily acquire land and rights where required and deemed marine licences for any offshore works.
Draft Order Limits	The area of land identified as being subject to the DCO application. The Draft Order Limits are made up of the land required both temporarily and permanently to allow for the construction, operation and maintenance, and decommissioning of the Proposed Scheme. All onshore parts of the Proposed Onshore Scheme are located within England and offshore parts of the Proposed Offshore Scheme are located within English territorial waters to 12 Nautical Miles and then up to the United Kingdom (UK) Exclusive Economic Zone (EEZ) boundary at sea.

Term	Description
Dutch Offshore Components	Is the term used when referring to the offshore elements of the Project within Dutch waters.
Eastern Route Option	As part of the Underground HVDC cable corridor, the Eastern Route Option would facilitate a degree of co-location with the Sizewell Link Road (SLR) scheme.
Environmental Impact Assessment (EIA)	The EIA is a systematic regulatory process that assesses the potential likely significant effects of a proposed project or development on the environment.
EIA Scoping Report	An EIA scoping report defines the proposed scope and methodology of the EIA process for a particular project or development. The EIA Scoping Report for the Proposed Scheme was submitted to the Planning Inspectorate with a request for the Secretary of State to adopt a scoping opinion in relation to the Proposed Scheme on 6 March 2024.
Environmental Statement (ES)	The ES is a document that sets out the likely significant effects of the project on the environment. The ES is the main output from the EIA process. The ES is published as part of the DCO application.
Exclusive Economic Zone (EEZ)	The zone in which the coastal state exercises the rights under Part V of the United Nations Convention on the Law of the Sea. These rights relate principally to the water column and may extend to 200 nautical miles from baselines. This is distinct from territorial waters, which for the UK extend 12 nautical miles from the coast.
Full Build Out of Kiln Lane Substation Scenario	The scenario if the Proposed Scheme was brought forward first, then it would be responsible for developing Kiln Lane Substation for the Proposed Scheme, with sufficient additional capacity for other projects.
Joint Bay	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Kiln Lane Substation	The proposed connection point for the Project to the British National Electricity Transmission System, located to the north of Friston. Formerly known as Friston Substation. The new name has recently been adopted by NGET. The substation is of the same footprint and in the same location. Friston Substation will, hereafter, be referred to as Kiln Lane Substation.
Landfall	The proposed Landfall is where the proposed offshore HVDC Submarine Cables are brought ashore and meets with the onshore proposed Underground HVDC Cables. This includes the Transition Joint Bay (TJB). The proposed Landfall will be located at Walberswick, and there will be no permanent above ground infrastructure at the proposed Landfall.
Landfall Site	The area where the Landfall may be located.
Limit of Deviation	A maximum distance or measurement of variation within which the works must be constructed. These are lateral (i.e. on the ground) and vertical limits (in relation to height).

Term	Description
Link Box Chamber	Link boxes are used at joint bays to facilitate grounding connections to ensure safety and enable maintenance. Link boxes can either be installed below ground, in a link box chamber, or in an above ground link pillar
Multi-purpose interconnector (MPI)	A project where GB interconnection is combined with transmission of offshore generation within GB (and optionally within a connecting state).
National Grid Electricity Distribution (NGED)	The local distribution network operator for the Midlands, the southwest of England and south Wales.
National Grid Electricity Transmission (NGET)	Operators of the national electricity transmission network across Great Britain and own and maintain the network in England and Wales, providing electricity supplies from generating stations to local distribution companies. National Grid does not distribute electricity to individual premises, but its role in the wholesale market is vital to ensuring a reliable, secure and quality supply to all.
National Grid Lion Link Limited (NGLLL)	The Applicant, a joint venture between National Grid Ventures and TenneT. NGLLL is a business within the wider National Grid Ventures portfolio.
National Grid Strategic Infrastructure (NGSI)	Part of NGET and responsible for delivering major strategic UK electricity transmission projects, focussed on connecting more clean, low-carbon power to England and Wales.
National Grid Ventures (NGV)	Operates and invests in energy projects, technologies and partnerships to accelerate the development of a clean energy future. This includes interconnectors (such as the LionLink Project), allowing trade between energy markets and the efficient use of renewable energy resources.
Nationally Significant Infrastructure Projects (NSIP)	Major infrastructure developments in England and Wales for which development consent is required, as defined within Section 14 of the Planning Act 2008 (as amended). This includes any development which is subject to a direction by the relevant Secretary of State pursuant to Section 35 of the Planning Act 2008.
Non-standard interconnector (NSI)	A project where GB interconnection is combined with transmission of offshore generation outside of GB.
Northern Route Option	A northern cable corridor option that would allow Underground HVAC Cable delivery for Proposed Scheme only.
Offshore Hybrid Asset (OHA)	A project that combines cross-border interconnection with the transmission of offshore generation, this is an overarching term which covers both multi-purpose interconnectors (MPI) and non-standard interconnectors (NSI).
Order Limits	The maximum extent of land within which the Proposed Scheme may take place, as consented.
Outline Offshore Construction	Describes the control measures and standards proposed to be implemented to provide a consistent approach to the environmental

Term	Description
Environmental Management Plan (Outline Offshore CEMP)	management of the construction activities of the Proposed Offshore Scheme.
Outline Onshore Code of Construction Practice (Outline Onshore CoCP)	Describes the control measures and standards proposed to be implemented to provide a consistent approach to the environmental management of the construction activities of the Proposed Onshore Scheme.
Overhead Lines (OHL)	Conductors (wires) carrying electric current, strung from Tower to Tower.
Planning Act 2008	The Planning Act 2008 being the relevant primary legislation for national infrastructure planning.
Planning Inspectorate (PINS)	The Planning inspectorate review DCO applications and make a recommendation to the Secretary of State, who will then decide whether to approve the DCO.
Preliminary Environmental Information Report (PEIR)	The PEIR is a document, compiled by the Applicant, which presents preliminary environmental information, as part of the statutory consultation process. This is defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 as containing information which "is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)" (Section 12 2. (b)). This PEIR describes the Proposed Scheme, sets out preliminary findings of the EIA undertaken to date, and the mitigation measures proposed to reduce effects. The PEIR is published at Statutory Consultation stage for information and feedback.
Project (the)	The LionLink Project (hereafter referred to as the 'Project') is a proposal by National Grid Lion Link Limited (NGLLL) and TenneT. The Project is a proposed electricity link between Great Britain (GB) and the Netherlands with a capacity of up to 2.0 gigawatts (GW) of electricity and will connect to Dutch offshore wind via an offshore platform in Dutch waters. The Project is the collective term used to refer to the proposal for all aspects (onshore and offshore) of the proposed interconnector between GB and the Netherlands.
Proposed Offshore Scheme	The term used when referring to the offshore elements of the Proposed Scheme, seaward of the mean high-water springs to the EEZ boundary at sea.
Proposed Onshore Scheme	The term used when referring to the onshore elements of the Proposed Scheme, landward of the mean low water springs. Proposed Onshore Scheme components include: a) Kiln Lane Substation. b) Underground High Voltage Alternating Current (HVAC) Cables; c) Converter Station.

Term	Description
	d) Underground High Voltage Direct Current (HVDC) Cables; and e) Landfall.
Proposed Scheme	Used when referring to the GB scheme components of the Project, not including Dutch components. This includes both the onshore and offshore scheme components which are within UK territorial waters and up to the UK EEZ boundary at sea.
Rochdale Envelope	The Rochdale Envelope or Design Envelope approach is employed where the nature of a proposed development means that some details of a project are not available in advance of, or at the time of submitting the DCO application. The Rochdale Envelope approach defines a design envelope and parameters within which the final design will sit and ensures a robust and reliable EIA can be undertaken.
Scoping Opinion	A scoping opinion is requested from the Planning Inspectorate on behalf of the Secretary of State, to inform the requirements of EIA process and ultimately the ES which will be submitted as part of the application for development consent. Through the scoping process, the views of the statutory consultees and other relevant organisations on the proposed scope of the EIA are sought. A Scoping Opinion for the Proposed Scheme was issued by the Planning Inspectorate (on behalf of the Secretary of State) on 16 April 2024. The Applicant received a separate EIA Scoping Opinion from the Marine Management Organisation (MMO) (Reference DCO/2024/00005, dated 04 September 2024) as the MMO were unable to provide opinion to the Planning Inspectorate in time for the April 2024 deadline.
Scottish Power Renewables (SPR) East Anglia One North (EA1N) and East Anglia 2 (EA2) Consents (SPR EA1N and EA2 Consents)	The Orders made following the Scottish Power Renewables applications for development consent for the following projects: a) The East Anglia ONE North Offshore Wind Farm Order 2022; and b) East Anglia TWO Offshore Wind Farm Order 2022
Southern Route Option	A southern cable corridor option that would allow: a) Underground HVAC Cable delivery for Proposed Scheme only, or b) Underground HVAC Cable delivery for Proposed Scheme and ducting for Sea Links Underground HVAC and HVDC cables in that section.
Statutory Consultation	Consultation undertaken with the community and stakeholders in advance of the application for development consent being submitted to the Planning Inspectorate, on behalf of the Secretary of state, in accordance with the PA 2008.

Term	Description
Substation	Substations are used to control the flow of power through the electricity system. They are also used to change (or transform) the voltage from a higher to lower voltage to allow it to be transmitted to local homes and businesses.
TenneT	Operator of the electricity transmission network across the Netherlands.
Tower	A structure used to carry overhead electrical conductors, insulators, and fittings. Often described as a pylon.
Transition Joint Bay (TJB)	An underground structure at the Landfall Site that house the joints between the offshore cables and the onshore cables.
Underground Cable Corridors	Collective term for the corridors within which HVAC and HVDC cables are planned.
Underground High Voltage Alternating Current (HVAC) Cable Corridor	A corridor in which the underground HVAC cables are planned to be installed.
Underground High Voltage Alternating Current (HVAC) Cables	Transmission cables which connect between the Converter Station and Substation. HVAC cables are designed to manage fluctuating flow of current.
Underground High Voltage Direct Current (HVDC) Cable Corridor	A corridor in which the underground HVDC cables are planned to be installed.
Underground High Voltage Direct Current (HVDC) Cables	Transmission cables which connect the Converter Station to the Landfall Site and then offshore. HVDC cables are designed to manage current flowing in one direction.
Visibility Splay	An area of land at a road junction that ensures drivers have an unobstructed view of oncoming traffic allowing them to safely join or cross the road.
Western Route Option	As part of the Underground HVDC cable corridor, the Western Route Option would deliver the Scheme within its own corridor with no co-location with the Sizewell Link Road (SLR) scheme.

8 Ecology and Biodiversity

8.1 Introduction

8.1.1 This chapter provides a preliminary assessment of the potential likely significant effects in relation to Ecology and Biodiversity from the construction, operation and maintenance, and decommissioning of LionLink (hereafter referred to as 'the Proposed Scheme').

8.1.2 This chapter outlines legislation, policy and guidance that is relevant to Ecology and Biodiversity, summarises the engagement undertaken to date, sets out the scope and methodology of assessment, and describes the baseline environment. Following this, the likely significant effects of the Proposed Onshore Scheme on Ecology and Biodiversity are assessed taking account of mitigation measures within the design and control measures. The need for additional mitigation is then considered along with proposals for monitoring and/or enhancement. The chapter concludes with a summary of residual effects.

8.1.3 Ecology and Biodiversity aspects considered within this chapter for the Proposed Onshore Scheme are:

a. A preliminary assessment of the potential impacts and effects upon ecological features:
   i. Statutory and non-statutory designated sites;
   ii. Irreplaceable and notable/priority habitats;
   iii. Protected or notable species.
b. Identified through:
   i. Permanent and temporary habitat loss, degradation and fragmentation/severance;
   ii. Direct mortality, injury or disturbance of protected or notable species.
c. Identification of opportunities for ecological mitigation and compensation and enhancement.

8.1.4 This chapter should be read in conjunction with **Chapter 2 Description of the Proposed Scheme** of this Preliminary Environmental Information Report (PEIR), which describes the development parameters against which the effects considered in this chapter have been assessed.

8.1.5 In addition, there may be interrelationships related to the potential effects on Ecology and Biodiversity and other disciplines. Therefore, this chapter should be read alongside relevant parts of other chapters; namely:

a. **Chapter 4 Legislation and Policy Overview**;
b. **Chapter 5 EIA Approach and Methodology**;
c. **Chapter 7 Air Quality** of this PEIR considers the potential for impacts upon ecological features through changes in air quality;
d. **Chapter 11 Historic Environment** of this PEIR considers ancient woodlands in the context of the historic environment;

e. **Chapter 12 Hydrology, Hydrogeology and Drainage** of this PEIR considers the potential for impacts upon ecological features from the water environment;
f. **Chapter 15 Noise and Vibration** of this PEIR considers the potential for impacts upon ecological features through noise and vibration;
g. **Chapter 19 Intertidal and Subtidal Benthic Ecology** of this PEIR considers the potential for impacts upon ecological features (intertidal and benthic habitats and their associated species), as a result of the Proposed Offshore Scheme;
h. **Chapter 20 Fish and Shellfish** of this PEIR considers the potential for impacts upon ecological features (fish and shellfish species and their associated habitats), as a result of the Proposed Offshore Scheme;
i. **Chapter 21 Intertidal and Offshore Ornithology** of this PEIR considers the potential impacts upon ecological features (bird species and their associated habitats), as a result of the Proposed Offshore Scheme; and
j. **Chapter 22 Marine Mammals** of this PEIR considers the potential impacts upon ecological features (marine mammal and reptile species and their associated habitats), as a result of the Proposed Offshore Scheme.

8.1.6 This chapter is supported by the following appendices (which include relevant figures):

a. **Appendix 8.1 Baseline Report – Designated Sites;**
b. **Appendix 8.2 Baseline Report – Habitat Classification Survey;**
c. **Appendix 8.3 Baseline Report – National Vegetation Classification Survey;**
d. **Appendix 8.4 Baseline Report – River Condition Assessment Survey;**
e. **Appendix 8.5 Baseline Report – eDNA Survey;**
f. **Appendix 8.6 Baseline Report – Hazel Dormouse Survey;**
g. **Appendix 8.7 Baseline Report – Herpetofauna Survey;**
h. **Appendix 8.8 Baseline Report – Badger Survey;**
i. **Appendix 8.9 Baseline Report – Bat Roost Survey;**
j. **Appendix 8.10 Baseline Report – Bat Activity Survey;**
k. **Appendix 8.11 Baseline Report – Advanced Bat Survey;**
l. **Appendix 8.12 Baseline Report – Wintering Bird Survey 2022-2023;**
m. **Appendix 8.13 Baseline Report – Wintering Bird Survey 2023-2024;**
n. **Appendix 8.14 Baseline Report – Breeding Bird Survey 2024;**
o. **Appendix 8.15 Baseline Report – Inshore and Beach Breeding Bird Survey 2024;** and
p. **Appendix 8.16 Baseline Report – Wintering Bird Survey 2025-2025**

8.2 Legislation, and policy framework

8.2.1 This section identifies the legislation, policy and guidance that has informed the assessment of the likely significant effects on Ecology and Biodiversity.

8.2.2 **Table 8.1** lists the key legislation relevant to the assessment of the likely significant effects on Ecology and Biodiversity.

Table 8.1: List of relevant legislation for Ecology and Biodiversity

Legislation	Relevance to assessment
The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 1)	Legal framework for the protection of habitats and species in the UK.
The Conservation of Offshore Marine Habitats and Species Regulations 2017 (Ref 2)	Legal framework for the protection of marine habitats and species in the UK.
The Environment Act 2021 (Ref 3)	Legal framework for Biodiversity Net Gain (BNG).
The Ramsar Convention on Wetlands 1971 (Ref 4)	Legal framework for the conservation and wise use of wetlands and their resources.
The Wildlife and Countryside Act 1981 (as amended) (Ref 5)	Sets out legal requirements and guidelines for the conservation of species and habitats in the UK.
The Natural Environment and Rural Communities Act 2006 (Ref 6)	Sets out duties and guidelines for the conservation of biodiversity including Section 41 (S41) habitats and species of principal importance.
The Countryside and Rights of Way Act 2000 (Ref 7)	Strengthens the protection of wildlife and habitats.
The Protection of Badgers Act 1992 (Ref 8)	Legal framework for the protection of badgers and their setts in the UK.
The Eels (England and Wales) Regulations 2009 (Ref 9)	Legal framework for the protection and management of eel populations in England and Wales.
The Salmon and Freshwater Fisheries Act 1975 (as amended) (Ref 10)	Legal framework for the protection and management of salmon and freshwater fish in the UK.
The Hedgerow Regulations 1997 (Ref 11)	Legal protection for important hedgerows.

National policy

National Policy Statements

8.2.3 The primary policy consideration for the Secretary of State when deciding whether to grant a Development Consent Order (DCO) for the Proposed Onshore Scheme will be the National Policy Statements (NPSs) for Energy. Of specific relevance to the Proposed Scheme are the Overarching National Policy Statement for Energy (NPS EN-1) (Ref 12), the NPS for Electricity Networks Infrastructure (NPS EN-5) (Ref 13), and separately the National Planning Policy Framework. These set out policies to guide how DCO applications for energy infrastructure should be decided and how the effects of such infrastructure are considered.

8.2.4 **Table 8.2** lists the paragraphs from the NPS and other national policy that are relevant to the Ecology and Biodiversity assessment. It also sets out where these policy requirements are addressed within this chapter.

Table 8.2: List of key relevant national policy for Ecology and Biodiversity

Relevant paragraph reference	Summary of policy requirement	Where addressed in PEIR
Overarching National Policy Statement for Energy (EN-1) (Ref 12)		
4.6.2	Although achieving biodiversity net gain is not currently an obligation on applicants, Schedule 15 of the Environment Act 2021 contains provisions which, when commenced, mean the Secretary of State may not grant an application for DCO unless satisfied that a biodiversity gain objective is met in relation to the onshore development in England to which the application relates.	BNG report will be published alongside the ES which will set out the strategy for the Proposed Onshore Scheme to achieve a minimum 10% BNG. For PEIR, the Statutory Biodiversity metric has been used to undertake an early indicative BNG calculation which is detailed in **Section 8.9** of this chapter.
4.6.12	When delivering biodiversity net gain off-site developments should do this in a manner that best contributes to the achievement of relevant wider strategic outcomes, reference should be made to relevant national or local plans and strategies, to inform off-site biodiversity net gain delivery. If published, the relevant strategy is the Local Nature Recovery Strategy. If an LNRS has not been published, the relevant consenting body or planning authority may specify alternative plans, policies or strategies to use.	Offsite strategy would be developed in consultation with key stakeholders for the ES and seek to align this with the Suffolk Nature Recovery Strategy, which is currently in development or other plan, policies or strategies specified by the planning authority.
5.4.8	Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted.	**Section 8.9** of this chapter of the PEIR sets out a preliminary assessment of any effects upon on SSSI which will also be assessed within the ES, with a cumulative assessment with other developments to be carried out for the ES.

Relevant paragraph reference	Summary of policy requirement	Where addressed in PEIR
5.4.14	Irreplaceable habitats are habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity.	The Proposed Onshore Scheme will be designed to ensure no impacts upon irreplaceable habitats.
5.4.17	The ES should clearly set out any effects on internationally, nationally, and locally designated sites of ecological conservation importance (including those outside England), on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats.	**Section 8.9** of this chapter of the PEIR sets out a preliminary assessment of any effects upon on internationally, nationally, and locally designated sites of ecological conservation importance (including those outside England), protected species habitats and other species identified as being of principal importance and irreplaceable habitats which will also be assessed within the ES.
5.4.19	The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity conservation interests.	Mitigation, compensation and enhancement strategies will be outlined within the ES.
5.4.21	The design process should embed opportunities for nature inclusive design. Energy infrastructure projects have the potential to deliver significant benefits and enhancements beyond Biodiversity Net Gain, which result in wider environmental gains.	Wider ecosystem services and benefits of natural capital will be considered as part of designing enhancement measures. This comes under the wider project approach to Environmental Net Gain.
5.4.22	The design of energy NSIP proposals will need to consider the movement of mobile/migratory species such as birds, fish and marine and terrestrial mammals and their potential to interact with infrastructure.	The assessment of mobile and migratory species is provided in **Section 8.8** of this chapter of the PEIR and includes avoidance through design.
5.4.25	The applicant should seek the advice of the appropriate Statutory	A Habitats Regulations Assessment (HRA) Evidence Plan

Relevant paragraph reference	Summary of policy requirement	Where addressed in PEIR
	Nature Conservation Body (SNCB) and provide the Secretary of State with such information to determine whether an HRA Appropriate Assessment is required, and applicants can request and agree HRA 'Evidence Plans' with SNCBs.	process has been initiated to agree key information with Natural England in conjunction with production of the **HRA Screening** for PEIR and ahead of the production of the onshore Report to Inform Appropriate Assessment (RIAA) for the ES.
5.4.33	The applicant should seek reasonable opportunities to maximise the restoration, creation, and enhancement of wider biodiversity	Mitigation, compensation and enhancement strategies will be outlined within the ES. Ecological feature specific mitigation and management strategies will be developed in consultation with relevant key stakeholders and SNCBs and published with the ES.
5.4.35	Applicants should include appropriate avoidance, mitigation, compensation and enhancement measures as an integral part of the proposed development.	
5.4.36	Applicants should produce and implement a Biodiversity Management Strategy as part of their development proposals.	
National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref 13)		
2.10.1	The applicant should consider and address routing and avoidance/minimisation of environmental impacts both onshore and offshore at an early stage in the development process.	The iterative design process will be informed by the ecological baseline as it progresses. A mitigation hierarchy approach will be applied to the Proposed Onshore Scheme design; seeking firstly to avoid or reduce adverse effects on valued ecological features.
National Planning Policy Framework (2024) (Ref 14)		
192 & 193	To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of	A mitigation hierarchy approach is being applied through the design process; seeking firstly to avoid or reduce adverse effects on valued ecological features and then to mitigate those which cannot be reduced. Where impacts cannot be avoided appropriate mitigation

Relevant paragraph reference	Summary of policy requirement	Where addressed in PEIR
	importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity. If significant harm to biodiversity cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. Development resulting in the loss or deterioration of irreplaceable habitats should be refused. Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.	strategies will be developed in consultation with relevant statutory authorities, Local Planning Authorities (LPAs) and key stakeholders. The Ecology & Biodiversity assessment is presented in PEIR and will form part of the ES. These assessments will be informed by extensive desk and field based ecological surveys. This will include identification of SSSI and irreplaceable habitats. The design process for the Proposed Onshore Scheme has sought to ensure there are no significant impacts upon irreplaceable habitats. Habitat creation and enhancement measures will be included within the design to mitigate and compensate impacts and to ensure a minimum 10% Biodiversity Net Gain is achieved (in combination with off-site gains). Areas of habitat creation and enhancement will be designed following good practice approaches, including the use of plant species of local provenance, in keeping with the character of the local landscape, and of benefit to biodiversity. Furthermore, habitat creation areas will be designed to, once established, improve ecological connectivity through the local landscape, by connecting up existing parcels of semi-natural habitats.
194	Potential Special Protection Areas and possible Special Areas of Conservation; listed or proposed	All potential, possible & candidate sites will be given same protection

Relevant paragraph reference	Summary of policy requirement	Where addressed in PEIR
	Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites to be given same protection as habitats sites.	within the Ecology & Biodiversity assessment including the HRA.

8.2.5 In April 2025, the Department for Energy Security and Net Zero (DESNZ) published the consultation on the revised energy NPS's, with draft updates made to NPS EN-1, NPS EN-3 and NPS EN-5. The Applicant recognises the clarifications that are proposed in the draft NPS's, including specific reference to Offshore Hybrid Asset's directed into the NSIP regime under Section 35 of the Planning Act 2008 (draft NPS EN-1 paragraph 4.2.18 and draft NPS EN-3 paragraph 1.6.3).

8.2.6 The Applicant acknowledges that the draft policy is subject to change and therefore all potentially relevant references that apply to the Proposed Scheme are not recorded within this PEIR.

8.2.7 The Applicant will continue to monitor the progress of the designation of the draft NPS's and their applicability to the Proposed Scheme, as it progresses through Statutory Consultation and towards the submission of the application for development consent.

Local policy

8.2.8 The local policies listed in **Table 8.3** are considered relevant to the Ecology and Biodiversity assessment of the Proposed Onshore Scheme.

Table 8.3: List of relevant local policy for Ecology and Biodiversity

Local planning authority	Relevant local policy	Relevance to assessment
East Suffolk Council (ESC) (Ref 15)	Waveney Local Plan Policy WLP8.34 Biodiversity and Geodiversity	Surveys for protected species and habitats are included in the baseline conditions **Section 8.6**, the assessment of ecological features in **Section 8.8** and mitigation measures in **Section 8.9** of this chapter. An **HRA Screening** for the Proposed Scheme has been prepared for PEIR.

8.3 Consultation and engagement

8.3.1 This section describes the outcome of, and response to, the EIA Scoping Opinion (Ref 16) in relation to the Ecology and Biodiversity assessment.

8.3.2 It also provides details of the ongoing technical engagement that has been undertaken with key stakeholders and provides a brief overview of the non-statutory public consultation undertaken to date.

8.3.3 Feedback from engagement and consultation are used to define the assessment approach and to ensure that appropriate baseline information is used.

8.3.4 It should be noted that feedback is also used to drive the design of the Proposed Scheme to avoid, prevent and reduce likely environmental effects. PEIR **Chapter 3 Alternatives and Design Evolution** reports how the Proposed Scheme design has evolved in response to feedback and details of proposed embedded design (Primary) mitigation and standard good practice (Tertiary) mitigation measures relevant to the Ecology and Biodiversity assessment are provided in **Section 8.9** of this chapter.

Consultation

Non-Statutory Consultation

8.3.5 Feedback received from stakeholders following the close of 2022 and 2023 Non-Statutory Consultation relevant to Ecology and Biodiversity aspects is outlined within the **Interim Non-Statutory Consultation Feedback Report** (Ref 17) and the **Supplementary Non-Statutory Consultation Summary Report** (Ref 18).

8.3.6 **Table 8.4** below includes a summary of key non-statutory consultation feedback received to date and how this has been addressed within the PEIR or will be within the ES.

Table 8.4: Key non-statutory consultation feedback for Ecology and Biodiversity

Stakeholder	Comment/Details	Applicant response
East Suffolk Council (ESC)	1. The shadow Habitats Regulations Assessment (sHRA) to include consideration of functionally linked land (in addition to the designated sites themselves). 2. Consideration required of locally designated sites and S41 Habitats and requirement for detailed	1. The HRA will consider Functionally Linked Land (FLL), in addition to the designated sites themselves. 2. Detailed field surveys have been undertaken to inform the ecological baseline and locally designated sites; the potential for impacts to S41 habitats and species have been assessed within **Section 8.8** of this chapter of the PEIR and will be assessed as part of the ES.

Stakeholder	Comment/Details	Applicant response
	field surveys for protected species. 3. Landfall Site Option at Walberswick requires consideration of internationally and nationally important designated sites. 4. Landfall Site Option at Southwold requires consideration of nationally important designation and impacts to County Wildlife Sites (CWS) habitats. 5. Landfall Site Option at Aldeburgh requires consideration of nationally important designations and Royal Society for the Protection of Birds (RSPB) site. 6. Requirement for detail on feasibility and impacts of Horizontal Directional Drilling (HDD) methods with particular regard to the crossing of internationally and nationally important designated sites, habitats and species.	3. **Section 8.8 of** this chapter of the PEIR includes a preliminary assessment of impacts upon internationally and nationally important designated sites including the Minsmere-Walberswick Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Ramsar sites (internationally important wetland sites) and Sites of Special Scientific Interest (SSSI) of relevance to the proposed Landfall Site at Walberswick. Internationally and nationally important sites will be assessed further as part of the ES. The Landfall Site selection process is set out within **Chapter 3 Alternatives and Design Evolution** of this PEIR. 4. The Landfall Site Option at Southwold has now been discounted and so has not been considered in this PEIR assessment. 5. The Landfall Site Option at Aldeburgh has now been discounted. 6. Feasibility studies and assessment of impacts as result of trenchless techniques will be assessed as part of the ES with particular regard to the crossing of internationally and nationally important designated sites in addition to habitats and species, with a preliminary assessment provided in **Section 8.8** of this chapter of the PEIR.
Suffolk County Council	1. Mirrors ESC responses around Landfall Site Options.	1. The Landfall Site Options at Aldeburgh, Dunwich and Southwold have now been discounted and therefore are not considered in this PEIR assessment. The Walberswick landfall option has been taken forward as the chosen site and is assessed

Stakeholder	Comment/Details	Applicant response
		within **Section 8.8** of this chapter of the PEIR.
The Environment Agency	1. Impacts upon internationally and nationally important sites and local sites should be avoided and number and scale of river crossings reduced, where possible. 2. Concerns over Converter Station Site 1 (adjacent to Great Wood) and Converter Station Site 4 (adjacent to Theberton Wood) with no site-specific ecological concerns over Converter Station Sites 3 or 5. 3. Landfall Site Option at Walberswick requires consideration of internationally and nationally important designated sites, the Dunwich River and Blyth Estuary. 4. Landfall Site Option at Aldeburgh requires consideration of internationally and nationally important designated sites and habitats. 5. Landfall Site Option at Southwold requires consideration of internationally and nationally important designated sites, Blyth Estuary and impacts to CWS in addition to breakout risk and coastal erosion. 6. Landfall Site Option at Dunwich requires consideration of internationally important	1. Where possible, the design process for the Proposed Onshore Scheme has sought to avoid impacts to all designated sites and reduce the number and scale of river crossings. Trenchless techniques will be implemented at all watercourse crossings. 2. All converter station site options have been discounted with the exception of the proposed Converter Station Site at Saxmundham, where it is noted that the Environment Agency have no site specific ecological concerns, with the preferred landfall option as Walberswick. 3. **Section 8.8 of** this chapter of the PEIR, the HRA and forthcoming ES have/will consider impact pathways that could occur as a result of the proposed Landfall Site at Walberswick and associated Cable Corridor. The HRA will also consider engineering studies and assessment of impacts upon ecological features as a result of potential breakout through HDD. 4. Landfall Site Option at Aldeburgh has been discounted is are no longer part of the Proposed Scheme design, therefore these has not been assessed further within this PEIR. 5. Landfall Site Option at Southwold has been discounted. 6. Landfall Site Option at Dunwich has been discounted. 7. **Section 8.8** of this chapter of the PEIR / ES has/will consider impact pathways that could occur as a result of the Landfall Site Option at

Stakeholder	Comment/Details	Applicant response
	designated sites and the Minsmere River. 7. All Landfall Site Options have a risk of HDD breakout that could affect the Minsmere River and Minsmere Reserve. 8. Requirement for Natural England Assent and consultation.	Walberswick and associated Cable Corridor Works that could affect the Minsmere River and Minsmere Reserve. 8. **Section 8.8** of this chapter of the PEIR includes a preliminary assessment of impacts upon Minsmere-Walberswick SSSI. This will also be assessed as part of the ES. Natural England Assent would be sought if this assessment concludes that the special features of the SSSI would be damaged. Natural England are engaged under Discretionary Advice Service (DAS) and are subject to regular consultation.
Friston Parish Council	1. Landfall Site Option at Aldeburgh requires assessment by all relevant stakeholders. 2. The presence of great crested newt (*Triturus cristatus*) (GCN) is noted as being of relevance to the Kiln Lane Substation, identified within Grove Wood.	1. The Landfall Site Option at Aldeburgh has been discounted and is no longer part of the Proposed Scheme design. 2. As agreed with Natural England under DAS, great crested newt will be addressed through the District Level Licensing (DLL) Scheme. The ES will include this, and the outcomes of Natural England impact assessments and detail of compensation required.
Forestry Commission	1. Consideration of loss of woodland & ecological value, compensation. 2. Protection for ancient woodland. 3. Inclusion of woodland under existing grant schemes.	1. The assessment of impacts to woodland habitats is provided in **Section 8.8** of this chapter of the PEIR and includes avoidance through design. 2. The assessment of impacts to ancient woodland habitats is provided in **Section 8.8** of this chapter of the PEIR and includes avoidance through design. 3. The assessment of impacts to woodland habitats is provided in **Section 8.8** of this chapter of the PEIR

Stakeholder	Comment/Details	Applicant response
		and includes any relevant woodland under a grant scheme.
Dunwich Parish Council	1. Landfall Site Option at Walberswick requires consideration of Dingle Marsh including the reedbeds and shingle bank. 2. Consideration required of trenching crossings of Dunwich Heath habitats with species such as stone curlew (*Burhinus oedicnemus*) and Dartford warbler (*Sylvia undata*).	1. **Section 8.8** of this chapter of the PEIR includes an assessment of potential impacts upon Dingle Marshes which will also be assessed as part of the ES. 2. The Landfall Site Option at Dunwich has been discounted and no longer part of the Proposed Scheme design.
Walberswick Parish Council	1. Landfall Site Option at Walberswick would violate designated sites and protected areas. 2. Landfall Site Option at Walberswick requires consideration of protected birds such as marsh harrier and the potential for cumulative effects with other projects such as Sizewell C.	1. **Section 8.8** of this chapter of the PEIR includes a preliminary assessment of impacts upon internationally and nationally important designated sites including the Minsmere-Walberswick SAC, SPA, Ramsar site and SSSI of relevance to the proposed Landfall Site at Walberswick which will include consideration of all qualifying bird species. This will also be assessed as part of the ES. 2. The ES will include a cumulative assessment with other developments.
Kelsale cum Carlton Parish Council	1. All Landfall Site Options and cabling from Landfall to Substation Options would require significant lengths of cables. Cabling trenching will threaten protected habitats and species.	1. The optioneering process has resulted in the proposed Landfall Site at Walberswick being selected, as assessed within **Section 8.8** of this chapter of the PEIR. The cable installation will include the use of trenchless techniques that aim to avoid the most sensitive ecological features or minimise associated impacts upon them.
Theberton and	1. Requirement for a minimisation of impacts	1. The design process for the Proposed Onshore Scheme has sought to avoid

Stakeholder	Comment/Details	Applicant response
Eastbridge Parish Council	upon national and international designated sites. 2. Landfall Site Options at Southwold, Walberswick and Aldeburgh require long cable routes and the Landfall Site Option at Walberswick requires a difficult crossing of international designated sites and Landfall Site Option at Southwold requires crossing of the Blyth valley, which would require HDD for be achievable.	or minimise impacts to all designated sites wherever possible. Alternatives considered are detailed in **Chapter 3 Alternatives and Design Evolution.** 2. The Landfall Site Options at Southwold and Aldeburgh have been discounted and no longer part of the Proposed Scheme design. The proposed Landfall Site at Walberswick includes provision for trenchless techniques at the crossings of designated sites.
Southwold Town Council	1. Consideration of SSSI required.	1. The design process for the Proposed Onshore Scheme has sought to avoid or minimise impacts to all designated sites wherever possible. Alternatives considered are detailed in **Chapter 3 Alternatives and Design Evolution. Section 8.8** of this chapter of the PEIR includes a preliminary assessment of impacts upon nationally important designated sites which will also be assessed as part of the ES.
Aldeburgh Town Council	1. All potential Cable Corridors from the Landfall Site Option at Aldeburgh are constrained. 2. Landfall Site Option at Aldeburgh would require cabling through international designated sites and an RSPB reserve. 3. Consideration of the value or sensitivity of the features required.	1. The Landfall Site Option at Aldeburgh has been discounted and no longer part of the Proposed Scheme design. 2. The design process for the Proposed Onshore Scheme has sought to avoid or minimise impacts to all designated sites wherever possible. Alternatives considered are detailed in **Chapter 3 Alternatives and Design Evolution.** This chapter of the PEIR includes a preliminary assessment of impacts upon statutory and non-statutory designated sites including RSPB

Stakeholder	Comment/Details	Applicant response
	4. Noted that all information presented was based upon desk study and may not be robust. 5. In addition to the designated sites, consideration required of protected habitats including vegetated shingle. 6. Consideration required for impact upon local wildlife, some of which may never return. 7. Consideration required of internationally and nationally designated sites including cable crossings and bird disturbance.	reserves which will also be included as part of the ES. 3. **Section 8.8** of this chapter of the PEIR has assessed ecological features in accordance with values and sensitivities in accordance with relevant guidance and will be assessed in the forthcoming ES. 4. **Section 8.8** of this chapter of the PEIR assesses ecological features based upon baseline data collected for the Proposed Onshore Scheme. 5. **Section 8.8** of this chapter of the PEIR includes a preliminary assessment of habitats including Annex I vegetated shingle and priority habitats, which will also be included as part of the ES. 6. **Section 8.8** of this chapter of the PEIR includes a preliminary assessment of protected and notable species based upon baseline data collected for the Proposed Onshore Scheme, which will also be included as part of the ES 7. **Section 8.8** of this chapter of the PEIR includes a preliminary assessment of the impacts to designated sites will be subject to crossing by utilising trenchless techniques for cable installation, and an assessment of noise and visual disturbance to birds which will also be included within the ES and HRA.
Suffolk Wildlife Trust (SWT)	1. Noting the potential for ecological impacts during construction and operation and the requirement for careful siting and design. 2. Requirement for new energy infrastructure to reduce overall negative impacts and maximise	1. **Section 8.8** of this chapter of the PEIR considers the potential for impacts to ecological features during all phases and the design process for the Proposed Onshore Scheme has sought to avoid the potential for impacts, which will also be reflected as part of the ES.

Stakeholder	Comment/Details	Applicant response
	potential for habitat creation and restoration. 3. Siting and routing options do not avoid the potential for significant and long-term adverse effects upon nationally and internationally sensitive designated sites, protected species and habitats. 4. Mapping presented for consultation is considered incomplete with regards to the designated sites included. 5. No information has been provided on construction methods or potential mitigation measures. 6. Landfall Site Option at Southwold – while the route does not pass through internationally important sites it includes CWS, SWT nature reserves, and large areas of priority habitat, as well as abutting SSSIs, SPAs, and Ramsar sites. Of particular concern is the crossing of the River Blyth valley and proximity to Reydon Wood CWS and SWT reserve.	2. The design process for the Proposed Onshore Scheme has sought to avoid or minimise negative impacts to biodiversity features wherever possible. The design will include habitat creation and restoration proposals, particularly along the River Fromus, at the proposed Converter Station Site and at Kiln Lane Substation as described in principle within the PEIR. 3. All Landfall options except for the proposed Landfall Site at Walberswick and associated cabling have now been discounted through the optioneering process. The design of this option has sought to avoid or minimise the potential for impacts to protected sites. Alternatives considered are detailed in **Chapter 3 Alternatives and Design Evolution.** 4. Mapping for the PEIR and ES includes/will include relevant statutory and non-statutory designated sites. 5. **Section 8.8 of** this chapter of the PEIR includes preliminary construction methods and mitigation measures for trenchless techniques which will be assessed further within the forthcoming ES. 6. The Landfall Site Option at Southwold has now been discounted.
RSPB	1. Landfall Site Option at Aldeburgh is considered likely to give rise to significant harm upon the Leiston-Aldeburgh SSSI and RSPB North Warren in addition to land with functional linkage to	1. The Landfall Site Option at Aldeburgh has now been discounted and no longer part of the Proposed Scheme design. 2. The Landfall Site Option at Dunwich has now been discounted. 3. The Landfall Site Option at Southwold has now been discounted.

Stakeholder	Comment/Details	Applicant response
	Sandlings SPA. Construction related disturbance with particular reference to RSPB North Warren. 2. Landfall Site Option at Dunwich required a cable route that crosses lowland heathland habitats of the Minsmere-Walberswick international and national designated sites. 3. Landfall Site Option at Southwold requires Blyth Estuary and Blythburgh Marshes to be considered functionally-linked to the Minsmere-Walberswick designated sites. 4. Works to install cable and vehicle movements would cause long-term damage to coastal and wetland habitats. 5. Consideration of Darsham Marshes.	4. The design has sought to avoid or minimise the potential for impacts to coastal and wetland habitats. Alternatives considered are detailed in **Chapter 3 Alternatives and Design Evolution. Section 8.8 of** this chapter of the PEIR includes a preliminary assessment of the potential for impacts to protected habitats. 5. The Landfall Site Option at Walberswick has been assessed within **Section 8.8 of** this chapter of the PEIR and will be assessed within the ES including the crossing of the Minsmere-Walberswick international and national sites which includes consideration of Darsham Marshes.
National Trust	1. The Trust does not object to the principle of the project however does not support the Landfall Site Option at Dunwich and associated Cable Route. 2. Consideration required of Dunwich Heath which is a surviving fragment of lowland heath and includes target species stone curlew, woodlark (*Lullula arborea*), Dartford warbler and stonechat (*Saxicola rubicola*).	1. It is noted that all responses received of relevance to Ecology and Biodiversity relate to the Landfall Site Option at Dunwich which has now been discounted and no longer part of the Proposed Scheme design. 2. The Landfall Site Option at Dunwich has been discounted.

Stakeholder	Comment/Details	Applicant response
Suffolk Energy Actions Solutions (SEAS)	1. Consideration required of protected sites within the Area of Outstanding Natural Beauty (now called National Landscapes). 2. Consideration required of the impact upon biodiversity with particular note made of the species associated with the River Hundred which feeds into RSPB North Warren.	1. **Section 8.8 of** this chapter of the PEIR includes a preliminary assessment of impacts upon statutory and non-statutory designated sites which will also be included as part of the ES. 2. **Section 8.8 of** this chapter of the PEIR includes a preliminary assessment of relevant RSPB sites and river habitats including associated species which will also be included as part of the ES.

EIA Scoping Opinion

8.3.7 An EIA Scoping Opinion was adopted by the Planning Inspectorate on behalf of the Secretary of State on 16 April 2024. Comments received from the Planning Inspectorate in relation to Ecology and Biodiversity are provided in **Table 8.5**.

Table 8.5: Preliminary response to Planning Inspectorate Scoping Opinion comments on Ecology and Biodiversity

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
3.3.1	Permanent or temporary loss of terrestrial, aquatic or intertidal habitats at RSPB sites during construction. This matter is proposed to be scoped out on the basis that the Onshore scoping Boundary would not overlap with RSPB sites. The figures supporting the Scoping Report do not show the RSPB Reserves/sites and thus their extent and proximity to the Proposed Development is not presented. They are however described in terms of distance to the Proposed Development at Table 8-5; the closest RSPB site is noted to be Minsmere at a distance of 25m. On the basis that habitat loss would not occur to RSPB sites and that potential likely significant effects to such sites including degradation of habitats due to changes in water quality and/or quantity and disturbance of species, as applicable, are scoped in (as per Table 8-8), the	Noted agreement on the proposal to scope out RSPB sites for permanent or temporary loss of terrestrial, aquatic or intertidal habitats. The closest RSPB site is now 460m from the DOL. RSPB sites have been included in the figures for **Appendix 8.1 Baseline Report – Designated Sites** of this PEIR and will be included in the ES figures. Further noted the agreement that RSPB sites are scoped in for degradation or habitats due to changes in water

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
	Inspectorate agrees this matter can be scoped out of the impact assessment.	quality/quantity and air quality.
3.3.2	Permanent or temporary loss of terrestrial, aquatic or intertidal habitats at Ancient Woodland Inventory (AWI) sites during construction. This matter is proposed to be scoped out on the basis that trenchless techniques and/or routing of cables (with associated construction corridors) would be used to avoid loss of ancient woodland. Paragraph 8.3.22 of the Scoping Report identifies that ancient woodland may be present within the Onshore Scoping Boundary beyond those identified on the AWI (Table 8-6). It is unclear if this matter to be scoped out includes all ancient woodland or only those listed on the AWI as per Table 8-6. The Inspectorate has commented on the assumption that it relates to all ancient woodland. The Applicant's attention is also directed to the comments of the Forestry Commission and Suffolk County Council (SCC) (Appendix 2 to this Opinion), which identify further potential ancient woodland not included on the AWI, such as Theberton Wood, together with potential updates to the ancient woodland information held by the Suffolk Biodiversity Information Service (SBIS). At this stage, and in the absence of information regarding the location of ancient woodland and certainty regarding routing and installation techniques, the Inspectorate cannot agree to scope out permanent or temporary loss of habitats at ancient woodland sites. The ES should include an assessment of this matter on ancient woodland sites, where likely significant effects could occur. The ES should clearly describe and adequately secure measures to avoid loss of ancient woodland such that likely significant effects would not occur.	Ancient woodland was scoped out on the basis that all woodland would be protected via trenchless techniques and/or cable routing, including a minimum 15m buffer. Updated information from SBIS on potential additional AWI sites has been obtained in 2025 to inform the PEIR. This confirms that a minimum 15m buffer from ancient woodland would be achieved. Whilst loss of ancient woodland is anticipated to be avoided, this potential impact is scoped into this PEIR and the subsequent ES.
3.3.3	Direct mortality of protected or notable species during operation. This matter is proposed to be scoped out on the basis that maintenance works would be focussed on infrastructure installed during construction and unlikely to require	Noted agreement on the proposal to scope out protected or notable species from direct mortality of protected or

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
	clearance of habitat likely to support protected or notable species. The Scoping Report notes that although vegetation management may be required in the form of cutting new hedgerows and trees, sensitive timing of such works would avoid damage or destruction of bird nests. The Inspectorate agrees that the maintenance activities are unlikely to lead to likely significant effects and can be scoped out on the above basis. The measures described to ensure avoidance of damage or destruction of bird nests must be adequately secured.	notable species during operation (maintenance). It is agreed that measures to ensure avoidance of damage or destruction of bird nests during these operations will be adequately secured. It is further noted Appendix 2 (Respondents to Consultation and Copies of Replies) of the Scoping Opinion includes a response from Natural England advising that direct mortality and injury of species during the operational phase is scoped in and as such this potential impact is scoped into the PEIR.
3.3.4	Baseline. The ES should clearly define and justify the study area, based on the Zone of Influence (ZoI) from the Proposed Development and the potential effect pathways. This should include the ZoI for designated sites, particularly the use of the 10km zone for European sites and 5km for SSSIs. The Applicant should consider the comments of Natural England in this regard (see Appendix 2 of this Opinion).	Justification for buffer distances including SSSI Impact Risk Zones (IRZ) have been clearly explained and presented within **Section 8.4** of this chapter of the PEIR and will be provided as part of the ES to allow a full assessment of all impact pathways.
3.3.5	Hedgerows. The Inspectorate notes reference to proposed hedgerow surveys at paragraphs 8.7.7 and 8.3.28, although limited detail on the likely extent and type of survey has been provided. The Scoping Report also states that "Additional assessments to identify Important hedgerows will only be undertaken if permanent hedgerow loss cannot be avoided within the proposed Landfall Sites, proposed Converter Station or proposed Friston Substation." The Scoping Report does not expand on whether hedgerows along the cable corridor would also be permanently lost to	Preliminary Ecological Appraisal (PEA) surveys have captured data to confirm if hedgerows comprise priority habitat, those that are species-rich and those that have the potential to support protected and/or notable species. This information has been used to refine the design to avoid the most

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
	the Proposed Development, although paragraph 13.8.4 of the Scoping Report refers to the assumption of no planting of hedgerows within 3m of the cable trench. Hedgerows are also not listed as features to be avoided through use of trenchless crossings at paragraph 8.5.3 of the Scoping Report. Sufficient baseline data should be collected to determine the likely significance of effects on hedgerow features, including those present along and affected by the cable route and within areas such as construction compounds, accesses, and haul routes. The ES should clearly state the value of hedgerows, the magnitude of impact, and significance of the effect. The ES should clearly describe and appropriately secure mitigation measures relating to hedgerows, including e.g. replacement and restoration, as appropriate.	sensitive hedgerows. If after this refinement, permanent losses within the proposed Landfall Site, proposed Converter Station Site or Kiln Lane Substation cannot be avoided, further assessments will be undertaken. In other locations within the DOL it is anticipated losses will be temporary and reinstated. The ES will clearly state the value of hedgerows, magnitude of impact and significance of effect. Mitigation including reinstatement will be fully explained in the ES and appropriately secured.
3.3.6	Assessment of features between ES chapters – e.g. birds, otter (*Lutra lutra*) and fish. The Inspectorate notes the intention to assess ornithological features in both onshore ecology and offshore ornithology ES chapters, and thus the potential for effects to be assessed on the same ornithological feature but presented within the two different aspect chapters. The Scoping Report also proposes to consider the combined offshore and onshore impacts in the Cumulative and Combined Effects ES Chapter 28. A similar approach is stated in respect of otters and fish features, with assessments in both onshore and offshore chapters and in ES Chapter 29. The ES should clearly identify likely significant effects to important ecological features, including ornithology features, and provide appropriate cross-reference to the findings of other relevant ES assessments to avoid duplication, whilst maintaining clarity of assessment.	**Chapter 5 EIA Approach and Methodology** of this PEIR sets out the approach to intra-project cumulative effects and the ES will use a clear intra-project combined effects assessment which will include cross-referencing as appropriate and will avoid duplication.
3.3.7	GCN and DLL. The Scoping Report describes the Applicant's intention to offset the effects of the Proposed Development on GCN by obtaining a	The Proposed Onshore Scheme falls within the amber and green risk zones

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
	licence through the Natural England DLL scheme. The Inspectorate understands that the DLL approach includes strategic area assessment and the identification of risk zones and strategic opportunity area maps. The ES should include information to demonstrate whether the Proposed Development is located within a risk zone for GCN. If the Applicant enters into the DLL scheme, Natural England will undertake an impact assessment and inform the Applicant whether the Proposed Development is within one of the amber risk zones and therefore whether the Proposed Development is likely to have a significant effect on GCN. The outcome of this assessment will be documented on an Impact Assessment and Conservation Payment Certificate (IACPC). The IACPC can be used to provide additional detail to inform the findings in the ES, including information on the Proposed Development's impact on GCN and the appropriate compensation required.	for GCN and is therefore eligible for DLL. The ES will include this, the outcomes of any Natural England impact assessments and detail of compensation required. The Proposed Onshore Scheme is under Natural England DAS agreement.
3.3.8	Terrestrial invertebrates – baseline. The Applicant's attention is directed to the comments of Middleton cum Fordley Parish Council and Walberswick Parish Council (Appendix 2 to this Opinion), which identifies further areas of potential importance to invertebrates.	The invertebrate interest of the Minsmere-Walberswick statutory designated sites near Walberswick and the CWS of the Minsmere Valley is acknowledged and has been considered within this chapter of the PEIR and will be considered as part of the ES (noting that there is a commitment to trenchless techniques in both locations). The two other areas of ecological value that are identified within the table in Middleton cum Fordley Parish Council's response are not within the Draft Order Limits (DOL) for the Proposed Onshore Scheme and will not be impacted.

Scoping Opinion ID	Scoping Opinion Comment	How this is addressed
3.3.9	Confidential annexes. Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers (*Meles meles*), rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Sensitive ecological information will be provided in redacted form within the PEIR and ES and included in full only as confidential annexes.

Engagement

8.3.8 This section provides details of the ongoing technical engagement that has been undertaken with stakeholders in relation to Ecology and Biodiversity and is outlined below.

Key stakeholders

8.3.9 Key stakeholders with views and concerns regarding Ecology and Biodiversity have been identified as including:

a. Natural England;
b. RSPB;
c. SWT; and
d. ESC.

8.3.10 Natural England are engaged under the DAS for the Proposed Onshore Scheme and have been subject to regular consultation as part of the pre-application process since July 2024. Key relevant engagement with Natural England undertaken to date is provided in **Table 8.6.** Engagement undertaken in relation to HRA is captured within Appendix A of the **HRA Evidence Plan**.

Table 8.6: Key engagement undertaken for Ecology and Biodiversity

Consultee	Date	Comment/Details	How this is addressed
Natural England (NE)	02 August 2024	DAS 26968/483513 1. Use of trenchless techniques supported if sufficient certainty can be implemented successfully. 2. Inclusion of measures to prioritise avoidance of impacts to native black poplar welcomed. 3. Reinstatement of shrubs and hedgerows to maintain ecological connectivity across the cable route welcomed, consider planting more than you are removing. 4. The suitability of remote sensing approach will depend on how much land could not be accessed, to be made clear when the results are presented. 5. Advise targeting all bird species which are designated features of the protected sites for which the study area falls within the IRZ.	6. The use of trenchless techniques, other avoidance measures and habitat reinstatement are covered in **Appendix 2.1 Outline Onshore Code of Construction Practice (CoCP)**. 7. The design of the Proposed Onshore Scheme has avoided all known native black poplar trees. 8. The Proposed Onshore Scheme includes commitments to reinstate shrubs and hedgerows to maintain ecological connectivity as secured through the CoCP. 9. The small areas of land inaccessible and subject to remote sensing are made clear in **Appendix 8.2 Baseline Report – Habitat Classification Survey**. 10. The breeding and wintering bird surveys were designed to include a target of species of conservation concern and qualifying ornithological features of designated sites as

Consultee	Date	Comment/Details	How this is addressed
			set out in **Appendix 8.12 Baseline Report – Wintering Bird Survey 2022-2023, Appendix 8.13 Baseline Report - Wintering Bird Survey 2023-2024, Appendix 8.14 Baseline Report - Wintering Bird Survey 2024-2025, Appendix 8.15 Baseline Report - Breeding Bird Survey 2024** and **Appendix 8.16 Baseline Report - Inshore and Beach Breeding Bird Survey 2024**.

8.4 Assessment methodology

8.4.1 This section outlines the methodology followed to assess the potential likely significant effects of the Proposed Onshore Scheme in relation to Ecology and Biodiversity, including:

a. scope of the assessment;
b. study area;
c. methodology; and
d. assessment of cumulative effects.

8.4.2 This section provides a description of how receptor sensitivity, magnitude of impact and significance of effects are all described and assigned to the assessment. For the purposes of the Ecology and Biodiversity assessment and in accordance with Chartered Institute of Ecology and Environmental Management (CIEEM) Guidance (Ref 19), ecological receptors are referred to as ecological 'features' throughout this chapter. Following this guidance, the assessment methodology is based on the principle that the environmental effects will be determined by identifying ecological features, determining the importance of the features, characterising impacts to the features and then identifying the significance of effects at a geographic scale.

8.4.3 The Ecology and Biodiversity assessment methodology follows the same fundamental process as the project-wide approach is set out in **Chapter 5 EIA Approach and Methodology** of this PEIR. However, there are differences in how the significance of effects are derived and defined as a result of following the

CIEEM Guidance (Ref 19). This guidance discourages the use of a general effects matrix and is explicit that local/ minor effects can be significant.

Scope of the assessment

8.4.4 Potential likely significant effects requiring assessment may be temporary or permanent and may occur during construction, operation and maintenance and/or decommissioning. Features within the scope of the assessment for Ecology and Biodiversity are summarised in **Table 8.7** and comprise the potential for effects through:

a. Permanent or temporary loss of terrestrial, aquatic or intertidal habitat
b. Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity
c. Fragmentation or severance of habitat
d. Direct mortality or injury
e. Disturbance

8.4.5 The scope of the assessment has responded to feedback received as detailed in **Section 8.3** and as such aligns with the EIA Scoping Opinion (Ref 16). **Table 8.7** identifies pathways for effect that are scoped into the assessment for each phase of the Proposed Onshore Scheme.

Table 8.7: Summary of the scope for Ecology and Biodiversity assessment

Feature	Construction	Operation and Maintenance	Decommissioning
Statutory designated sites	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity	Scoped out	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity
Non-statutory designated sites	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat • Degradation of terrestrial, aquatic	Scoped out	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat

Feature	Construction	Operation and Maintenance	Decommissioning
	or intertidal habitats through changes in air quality, water quality or quantity		• Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity
RSPB sites	Scoped in: • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity	Scoped out	Scoped in: • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity
Ancient woodland, including Ancient Woodland Inventory sites	Scoped in: • Permanent or temporary loss • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity	Scoped out	• Scoped in: • Permanent or temporary loss • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity
Notable/priority habitats	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity	Scoped out	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat • Degradation of terrestrial, aquatic or intertidal habitats through changes in air quality, water quality or quantity
Protected or notable species	Scoped in: • Permanent or temporary loss of terrestrial, aquatic or intertidal habitat	Scoped in: • Direct mortality or injury • Disturbance	• Scoped in: Permanent or temporary loss of terrestrial, aquatic

Feature	Construction	Operation and Maintenance	Decommissioning
	• Fragmentation or severance of habitat • Direct mortality or injury • Disturbance		or intertidal habitat • Fragmentation or severance of habitat • Direct mortality or injury • Disturbance
Great crested newt (GCN)	Scoped Out: • District Licensing Scheme	Scoped Out	Scoped Out

8.4.6 The Proposed Onshore Scheme would use the Suffolk DLL run by Natural England for great crested newt (GCN). As such, there has been no need to undertake surveys (with the exception of a small number of surveys to inform Ground Investigation works), impact assessment or delivery of specific mitigation for GCN. DLL is an alternative approach to mitigation licensing for developments which could affect GCN. DLL aims to increase the number of GCN by providing new or better habitats in targeted areas to benefit their wider population. It is a simpler, quicker process than mitigation licensing because planning applications do not need to include surveys of great crested newts or plans to carry out mitigation work to move GCN to safety. The financial contribution to the licensing scheme ensures delivery of measures as a strategic level to support a conclusion of no likely significant effect.

8.4.7 In April 2024 Natural England provided results and costings from an initial DLL Impact Assessment for the Proposed Onshore Scheme, this was based on full permanent impacts applied as a worst-case scenario to the longest length of cable anticipated at that stage of the design process. Engagement with Natural England will continue to refine and agree the conservation payment for DLL based on the impacts for the Proposed Onshore Scheme for the ES.

8.4.8 Whilst considerable survey effort for a wide range of features has been undertaken to inform this chapter of the PEIR, further targeted surveys are required to inform continued design refinement and further assessment of impacts. This is not considered to comprise a limitation as all required areas will be adequately surveyed to inform the ES.

8.4.9 In the southern section of the Proposed Onshore Scheme, encompassing the proposed Converter Station, Kiln Lane Substation and the proposed Underground High Voltage Alternating Current (HVAC) Cable Corridor, there is considerable overlap with the Sea Link project. Therefore, data from the Sea Link project has been utilised where available to help inform the assessment.

Study area

8.4.10 This section describes the spatial scope (the area which may be impacted) for the assessment as it applies to Ecology and Biodiversity.

8.4.11 The study area for Ecology and Biodiversity includes all land within the DOL of the Proposed Onshore Scheme (**Figure 1.2**).

8.4.12 The study area includes land beyond the DOL within an additional prescribed buffer for individual biodiversity features. Buffer distances are based upon the characteristics and sensitivity of the feature, informed by published industry guidance and professional judgement to determine an appropriate ZoI.

8.4.13 The desk study included a search for the following features. The buffer distances applied to the DOL for the respective features are set out:

a. statutory nature conservation designated sites of international importance (SAC, possible SACs (pSAC), candidate SACs, SPA, potential SPAs (pSPA) and Ramsar sites) within 10km of the DOL and within 30km for any SAC designated for bats;
b. statutory nature conservation designated sites of up to national importance (SSSI, National Nature Reserves (NNR) and Local Nature Reserves (LNR)) within 5km of the DOL and SSSI with an IRZ that overlaps the DOL;
c. non-statutory nature conservation designated sites (for example, CWS) within 2km of the DOL;
d. RSPB reserves within 2km of the DOL;
e. records of protected and notable species within 2km of the DOL; and
f. ancient woodland within 1km of the DOL; and Notable habitats (for example, Habitats of Principal Importance (HPI) Section 41 (41) of the Natural Environment and Rural Communities Act and ancient, veteran and notable trees within 1km of the DOL.

Zones of influence

8.4.14 The CIEEM Guidelines for Ecological Impact (Ref 19) recommend that all potentially important ecological features that occur within the ZoI for a scheme are investigated. The ZoI includes:

a. areas to be directly within the land take for the Proposed Onshore Scheme;
b. areas that would be temporarily affected during construction;
c. areas likely to be impacted by hydrological disruption; and
d. areas where there is a risk of pollution and noise disturbance during construction and/or operation.

8.4.15 The ZoI depends on the ecological features concerned. For designating habitats and species of statutory and non-statutory designated sites (and RSPB reserves), the maximum potential ZoI is taken to be as the same as the respective study areas.

8.4.16 The ZoI for irreplaceable habitats, including ancient woodlands, veteran and ancient trees, is considered to be up to 200m from the DOL in order to account for impacts arising from air quality changes.

8.4.17 For habitats not associated with designated sites, the ZoI has been defined as land within and adjacent to the DOL, which comprises the footprint of the Proposed Onshore Scheme, including temporary areas utilised for construction, as well as mitigation, compensation and enhancement areas. The ZoI for species not associated with designated sites varies dependent upon the individual sensitivities of the species, with the maximum potential ZoI taken to be the same as the 2km study area for protected/notable species, for mobile species such as bats and birds.

Assessment scenarios

8.4.18 **Chapter 2 Description of the Proposed Scheme, Section 2.3** of this PEIR provides a description of the Proposed Onshore Scheme, including a geographical description of the site and surroundings. **Chapter 5 EIA Approach and Methodology** of this PEIR, provides an overview of the Proposed Scheme's approach to the temporal scope (the time scales over which impacts may occur) of the EIA. This section describes the temporal scope for the assessment as it applies to Ecology and Biodiversity.

8.4.19 The assessment scenarios and options to be considered are set out within **Section 5.6 Assessment Scenarios and Options** of **Chapter 5 EIA Approach and Methodology** of this PEIR which include the Amendment to Kiln Lane Substation Scenario and Full Build Out of Kiln Lane Substation Scenario for the Proposed Onshore Scheme.

8.4.20 The conclusions on significant effects within **Section 8.8 Assessment of effects** of this chapter of the PEIR specify whether they relate to both Kiln Lane Substation scenarios or whether there is a difference between the Kiln Lane Substation scenarios in terms of impacts to the ecological receptor under consideration. Furthermore, where there are impacts relating to a proposed Underground Cable Corridor section for which there are options, any material difference in anticipated effects between the options under consideration are explained within the relevant feature subsections.

8.4.21 The temporal scope considers the time period over which changes to the environment and the resultant effects are predicted to occur and are typically defined as being either temporary or permanent. For Ecology and Biodiversity, the following activities are considered to be permanent or temporary:

a. Permanent - these are effects that are irreversible and will remain even when the Proposed Onshore Scheme is complete. Key examples include habitat losses and degradation from permanent infrastructure, loss of species from a location with no route for recolonisation, or changes to habitat type or species distribution/status (i.e. from pollution, hydrology, Invasive Non-Native Species (INNS)) which will not readily revert back to the baseline condition.
b. Temporary – these are effects that are due to environmental changes associated with a particular activity that will cease following completion of the activity. Key examples include habitat losses and degradation that will be returned to baseline conditions post-construction, changes to habitat type or

species distribution/status which will revert back to baseline condition post-construction.

Baseline methodology

Data collection

8.4.22 Baseline data collection has been undertaken to obtain information over the study area. This section provides the approach to collecting baseline data.

8.4.23 The following sources of data have been utilised to inform the baseline with respect to Ecology and Biodiversity (see **Table 8.8**). A baseline report comprising the desk study carried out for statutory and non-statutory sites including visual representations is provided in **Appendix 8.1 Baseline Report - Designated Sites**.

8.4.24 An initial risk assessment to determine ecological features that could be impacted by changes in air quality through nitrogen deposition has been carried out and is reported in **Chapter 7 Air Quality** of this PEIR. This has included consideration of statutory and non-statutory designated sites and ancient woodland and veteran and ancient trees within 200m of the DOL for PEIR, in the absence of traffic data to inform the Affected Road Network (ARN). An updated risk assessment will be carried out for the forthcoming ES which will include screening of air quality impacts upon these ecological features and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme.

Table 8.8: Data sources used to inform the Ecology and Biodiversity assessment

Source of data	Baseline data
Multi-Agency Geographic Information for the Countryside (MAGIC) (Ref 20)	Information relating to statutory designated sites, HPIs and granted European Protected Species licensing applications.
Joint Nature Conservation Committee – UK Protected Areas (Ref 21)	Information relating to the qualifying features of internationally important statutory designated sites.
NE Designated Sites search (Ref 22)	Information relating to the qualifying features of nationally important statutory designated sites.
SBIS	Information relating to protected and/or notable species, non-statutory designated sites and veteran trees. Initially undertaken in 2023 and updated in 2025.
Natural England AWI (Ref 23)	Information relating to the presence and origin of ancient woodland sites.
Priority River Habitat Map (Ref 24)	Information relating to the presence of mapped HPI rivers in the UK.

Source of data	Baseline data
Woodland Trust Ancient Tree Inventory (Ref 25)	Information relating to mapped ancient, veteran and notable trees within the Woodland Trust database.
People's Trust for Endangered Species (PTES) Hazel dormouse reintroduction sites report (Ref 26)	Information relating to known local populations of hazel dormouse associated with reintroduction sites.
Sea Link ES (Ref 27)	All relevant design and ecological baseline data recorded for the Sea Link project for areas of overlap and/or colocation with the Proposed Onshore Scheme. Information and locations relating to veteran and ancient trees referenced throughout this Chapter can be found in: *Sea Link Volume 6: Environmental Statement* *Document: 6.10 Arboricultural Impact Assessment Part 1 of 2.*
Air Pollution Information System (APIS) (Ref 28)	A searchable database and information on pollutants and their impacts on habitats and species.

Site surveys

8.4.25 The baseline site surveys undertaken for Ecology and Biodiversity are presented in **Table 8.9**.

8.4.26 Further detail on methods and descriptions of spatial extent for the site survey types outlined in **Table 8.9** can be found within the respective baseline reports appended to this chapter. Those for which no report is indicated are either of relevance only to the discounted Landfall Site Option at Southwold, will be produced for the ES, or the surveys were small-scale and will be included only within PEIR/ES text.

Table 8.9: Site surveys informing the Ecology and Biodiversity assessment

Survey type	Relevant baseline report(s)	Spatial extent surveyed at the time of writing	Period undertaken	Further survey effort anticipated
PEA surveys: • UK Habitat Classification • BNG condition scoring • Protected and/or notable species scoping • Identification of INNS	**Appendix 8.2 Baseline Report – Habitat Classification**	Habitats within the DOL and wider EIA Scoping Boundary.	May to October 2023 May to August 2024 May 2025	Survey of all land falling within the DOL which has not previously been accessed for survey – either due to access limitations or land outside the EIA Scoping Boundary being incorporated. Additional update survey of potentially impacted habitats which are of medium distinctiveness or higher.
National Vegetation Classification (NVC)	**Appendix 8.3 Baseline Report – National Vegetation Classification Survey**	High distinctiveness habitats at risk of impacts at a draft proposed alignment stage established in late 2023.	June 2024	Survey of high-value habitats within the Minsmere - Walberswick designated site which intersect with the DOL to inform impact assessment.
Hedgerows Regulations survey	N/A	Limited to linear features within areas of potential permanent infrastructure within the DOL (proposed Converter Station and proposed Landfall Site).	July 2024	Detailed Hedgerows Regulations survey of all potentially impacted linear features falling within the DOL.
River Condition Assessment (RCA)	**Appendix 8.4 Baseline Report – River Condition Assessment (RCA) Survey**	All watercourses falling within the DOL.	August – October 2023	No further survey effort anticipated.

Survey type	Relevant baseline report(s)	Spatial extent surveyed at the time of writing	Period undertaken	Further survey effort anticipated
Broad-spectrum Environmental DNA (eDNA) sampling	**Appendix 8.5 Baseline Report – eDNA Survey**	All watercourses crossing the DOL.	May to October 2023	Sampling of new watercourse sections within land which has been incorporated onto the DOL, limited to the River Fromus south of Saxmundham.
Hazel dormouse	**Appendix 8.6 Baseline Report – Hazel Dormouse Survey**	Landscape scale sampling of high suitability habitats within and surrounding the DOL.	July to October 2023	No further survey effort anticipated.
Reptiles	**Appendix 8.7 Baseline Report – Herpetofauna Survey**	Suitable habitats at risk of impacts at a draft proposed alignment stage established in late 2023.	April to September 2024	No further survey effort anticipated.
Badger	**Appendix 8.8 Baseline Report – Badger Survey**	Detailed mapping of main setts at risk of impacts at a draft proposed alignment stage established in late 2023.	June to July 2024	Updated survey for badger setts within the DOL and appropriate buffer.
Bat roost surveys (Ground Level Tree Assessment (GLTA) and climbing or emergence/re-entry)	**Appendix 8.9 Baseline Report – Bat Roost Survey**	Limited to trees within areas of potential permanent infrastructure within the DOL (proposed Converter Station and proposed Landfall Site).	May to September 2024	GLTA of all trees at risk of potential impact within the DOL. Subsequent roost determination surveys (climbing or emergence/re-entry) of trees impacted following further design refinement.

Survey type	Relevant baseline report(s)	Spatial extent surveyed at the time of writing	Period undertaken	Further survey effort anticipated
Bat activity surveys (transects and static detector dependant)	**Appendix 8.10 Baseline Report – Bat Activity Survey**	Landscape scale sampling of high suitability habitats within and surrounding the DOL.	June to October 2024 April to October 2024	No further survey effort anticipated.
Bat trapping and radio tracking	**Appendix 8.11 Baseline Report – Advanced Bat Survey**	Focussed on features within and surrounding the DOL of high suitability for foraging and connectivity between important areas of dispersal.	May to August 2024	No further survey effort anticipated.
Water vole (*Arvicola amphibius*)	N/A	All watercourses with identified water vole presence or high suitability at risk of impacts at draft proposed alignment stage established in late 2023. Limited to the now discounted potential Landfall Site at Southwold.	June to September 2024	No further survey effort anticipated.
Otter	N/A	No specific survey effort undertaken to date – presence assumed across all watercourses.	N/A	Potential for further survey to identify potential resting places within suitable habitats at risk of disturbance impacts following further design refinement.

Survey type	Relevant baseline report(s)	Spatial extent surveyed at the time of writing	Period undertaken	Further survey effort anticipated
Wintering birds (Including inshore surveys)	**Appendix 8.12 Baseline Report – Wintering Bird Survey 2022-2023** **Appendix 8.13 Baseline Report – Wintering Bird Survey 2023-2024** **Appendix 8.14 Baseline Report – Wintering Bird Survey 2024-2025**	Winter 1: Sampling of key locations (proposed Landfall Site, proposed Converter Station, SPA crossings, potential FLL) from publicly accessible land. Winter 2 and 3: Walkover surveys of targeted locations relevant to the DOL, refined from the results of winter one and consultation with Natural England Winter 2 and 3: Inshore and beach surveys of 2km radius of the inshore area from the proposed Landfall Site, incorporating 4km of adjacent beach.	November 2022 to March 2023 October 2023 to March 2024 October 2024 to March 2025	Potential requirement for further surveys in specific locations relating to HRA to be determined through ongoing consultation with stakeholders.
Breeding birds	**Appendix 8.15 Baseline Report – Breeding Bird Survey 2024**	Breeding bird transects across the DOL, taking in a variety of habitats; particularly those considered suitable for qualifying features of the relevant designated sites.	March to July 2024	Second year of vantage point surveys for bittern and marsh harrier within the Minsmere-Walberswick designated site. Second year of transect surveys along the proposed Landfall Site and Walberswick

Survey type	Relevant baseline report(s)	Spatial extent surveyed at the time of writing	Period undertaken	Further survey effort anticipated
		Vantage point surveys for bittern (*Botaurus stellaris*) and marsh harrier (*Circus aeruginosus*) within suitable habitats associated with the Minsmere-Walberswick designated site.		leg (within and surrounding Minsmere-Walberswick designated site) and surrounding the proposed Converter Station and Kiln Lane Substation. Species specific surveys for stone curlew, hobby (*Falco subbuteo*), nightjar (*Caprimulgus europaeus*), quail (*Coturnix coturnix*), red kite (*Milvus milvus*), barn owl (*Tyto alba*) and goshawk (*Accipiter gentilis*).
Inshore and beach breeding bird surveys	**Appendix 8.16 Baseline Report – Inshore and Beach Breeding Bird Survey 2024**	2km radius of the inshore area from the proposed Landfall Site, incorporating 4km of adjacent beach.	April to September 2024	Second year of surveys to be undertaken to affirm findings from the initial survey year.
Preliminary fish spawning habitat appraisal	N/A	N/A	N/A	Surveys required for all watercourses falling within the DOL.
Arboricultural survey	N/A	N/A	Late 2025	Surveys of all land within and immediately adjacent to the DOL. Will include identification and classification of ancient and veteran trees using standardised methodology.

Survey type	Relevant baseline report(s)	Spatial extent surveyed at the time of writing	Period undertaken	Further survey effort anticipated
Terrestrial and aquatic invertebrates	N/A	Habitats likely to support protected and/or notable species and assemblages at risk of impacts at a draft proposed alignment stage established in late 2023. Limited to the now discounted potential Landfall Site at Southwold.	May to September 2024	Potential requirement for sampling of aquatic invertebrates associated with saline lagoon habitats falling within the DOL, dependent upon design development.
Aquatic macrophytes	N/A	N/A	N/A	Potential requirement for sampling of aquatic macrophytes associated with saline lagoon habitats falling within the DOL, dependent upon design development.

Determining importance of ecological features

8.4.27 Relevant ecological features (sites, habitats and species) that are of importance for biodiversity conservation in the UK will be identified with reference to nature conservation policy and legislation. The importance of ecological features will be considered within the geographic frame of reference shown in **Table 8.10**.

Table 8.10: Examples of criteria used to evaluate important ecological features in a defined geographical context

Geographical level at which ecological feature is important	Example of criteria
International or European	National site network constituents including SPAs, SACs, candidate SACs and Sites of Community Importance, pSPAs, pSACs, Ramsar sites (designated under international convention) and proposed Ramsar sites are also considered in the same manner in accordance with national planning policy. Areas of habitat or populations of species which meet the published selection criteria for designation as a European site, but which are not themselves currently designated at this level.
National	A nationally designated site including SSSIs and NNRs. Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated. Species of Principal Importance (SPIs) and HPIs, red listed and legally protected species may be of national importance in the context of published information on population size and distribution. Irreplaceable habitats.
Regional	Regularly occurring HPI or populations of SPI, Red listed and legally protected species may be of regional importance in the context of published information on population size and distribution.

Geographical level at which ecological feature is important	Example of criteria
	LNRs and non-statutory designated sites.
Metropolitan, County, District, vice-county or other local authority-wide area	Areas which meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.
Local	HPI and SPI, Red listed and legally protected species that based on their extent, population size and quality are determined to be at a lesser level of importance than the geographic contexts above. Common and widespread semi-natural habitats occurring within the study area in proportions greater than may be expected in the local context. Common and widespread native species occurring within the study area in numbers greater than may be expected in the local context.

Characterisation of impacts

8.4.28 In line with section 1.2 in the CIEEM Guidelines (Ref 19), the terminology used within this chapter draws a clear distinction between the terms 'impact' and 'effect'. For the purposes of this chapter these terms are defined as follows:

a. Impact – actions resulting in changes to an ecological feature. For example, construction or decommissioning activities of a development removing a hedgerow.
b. Effect – outcome resulting from impact acting upon the conservation status or structure and/or function of an ecological feature. For example, the effects on a population of bats as a result of the loss of a bat roost.

8.4.29 When describing potential impacts consideration has been given to the following characteristics likely to influence this (Sections 5.11-5.18 in the CIEEM Guidelines (Ref 19)):

a. Positive/Negative – i.e. is the change likely to be in accordance with nature conservation objectives and policy:
    i. Positive – a change that improves the quality of the environment or halts or slows an existing decline in quality for example increasing the extent of a habitat of conservation value.
    ii. Negative – a change that reduces the quality of the environment, for example destruction of habitat.

b. Extent – the spatial or geographical area or distance over which the impact/effect occurs.
c. Magnitude – the 'size', 'amount' or 'intensity' and 'volume' of an impact - this is described on a quantitative basis where possible.
d. Duration – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact.
e. Timing and frequency – i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons.
f. Reversibility – i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

Significance of effects

8.4.30 As stated in the CIEEM Guidelines (Ref 19), for the purpose of Ecological Impact Assessment (EcIA), a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (for example for a designated site), broad (for example national/local nature conservation policy), or more wide-ranging (enhancement of biodiversity).

8.4.31 Effects can be considered significant at a wide range of scales from international to local. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

8.4.32 In determining the significance of effects, embedded and control measures will be taken into account which are set out in **Chapter 2 Description of the Proposed Scheme** of this PEIR and **Appendix 2.1 Outline Onshore Code of Construction Practice (CoCP)** of this PEIR with those of relevance to Ecology and Biodiversity set out in **Section 8.7** of this chapter.

8.4.33 Significant effects will be qualified with reference to an appropriate geographic scale and set out in **Table 8.11**. For example, a significant effect on a SSSI is likely to be of National significance. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect on a species which is on a national list of SPIs for biodiversity may not have a significant effect on its national population.

8.4.34 A matrix approach to effect characterisation is not used because the CIEEM guidelines do not recommend this approach. The guidelines also discourage use of categorising effects (e.g. major, moderate or minor) but suggest that where a project requires this for consistency with other topics then the guidance in **Table**

8.11 should be used. The scale of 'Regional' is often poorly defined and subject to different interpretations, and Regional effects will therefore be categorised as Major or Moderate to be determined on a case-by-case basis with appropriate justification. Impacts that result in effects that would occur at a geographical scale that is less than Local/ Minor are not considered to be significant.

8.4.35 Bats have been assessed against the Bat Mitigation Guidelines (2023) (Ref 29) which state that receptors assessed as being sufficiently valuable to be considered as Important Ecological Features (IEFs) should be subject to impact assessment, which typically applies to IEFs at "District value and above".

Table 8.11: Categories of significant effects (Ref 19)

Geographical scale at which the effect is assessed as being significant following the CIEEM Guidelines	Category of significant effect
International, National, Regional	Major
Regional, Metropolitan, County, District, vice-county or other local authority-wide area, River basin district, Estuarine system/Coastal cell	Moderate
Local	Minor

8.4.36 Any additional mitigation will be taken into account and the residual effect concluded, also in accordance with the categories in **Table 8.11**.

Feature grouping

8.4.37 Ecological features of relevance to the Proposed Onshore Scheme have been grouped in an ecologically coherent manner to aid the presentation of the assessment. Features have been grouped based upon factors outlined below:

a. Designated sites – where ecological features fall within or are clearly associated with existing designated sites, at varying geographical importance, many of which have considerable overlap in boundaries and qualifying features.
b. Spatial aggregation – where clusters of ecological features occur in proximity to one another, forming part of a broader ecological system than considered in isolation.
c. Shared physical influences – where groups of ecological features are subject to similar physical or abiotic influence, including hydrological input, underlying soil form and type, salinity or anthropogenic disturbances.

8.4.38 Where features are more numerous and/or scattered though the DOL, these are assessed as a scheme-wide grouping where appropriate. Such features include hedgerows, lines of trees, mature trees and more common and widespread species.

8.4.39 Bird species have been grouped into designated site features when they form part of the site's features and have been located within the designated site or

within its respective IRZ (Ref 30). These groupings apply to statutory designated sites, namely SPAs, Ramsar sites and SSSIs. From a precautionary perspective, the IRZs have been applied to NNRs and LNRs. For CWS, birds are grouped as a feature as part of the non-statutory site if they are described within the citation, in which case bird interest is considered within the CWS and an adjacent buffer based upon professional judgement. All other species not associated within a designated site are grouped into features based upon habitat type primarily.

8.4.40 Bat species have been split into four distinct groupings based on the rarity categories assigned to each species within the Bat Mitigation Guidelines (2023). These categories correspond to the Southeastern/East Anglia to the Wash geographic region listed within the guidelines. (Ref 29). The four groupings distinguish between the rarest Annex Ⅱ species present (Barbastelle bats (*Barbastella barbastellus)*), rare or range restricted species, widespread but uncommon species, and widespread and common species.

Cumulative assessment

8.4.41 **Chapter 28 Cumulative Effects** of this PEIR defines the methodology for the assessment of cumulative effects. The Ecology and Biodiversity assessment of intra- and inter-project cumulative effects will be carried out and reported within the ES. In addition to assessing the cumulative impacts between the Proposed Scheme and other developments, this methodology also covers whether the Proposed Onshore Scheme, considered within this chapter, and the Proposed Offshore Scheme could potentially result in effects upon the same ecological receptor. It describes the approach that will be used to assess whether the combination of effects upon an individual receptor is likely to lead to an overall effect of greater significance.

8.4.42 The ZoI for the inter-project cumulative effects assessment of Ecology and Biodiversity comprises a 10km area of interest based upon the DOL and as set out within **Chapter 28 Cumulative Effects**.

Guidance

8.4.43 In addition, the Ecology and Biodiversity assessment has been undertaken in accordance with relevant guidance and has been compiled in accordance with professional standards. The guidance and standards which relate to this assessment are, with the primary source being the CIEEM guidance:

a. CIEEM, “Guidelines For Ecological Impact Assessment In The UK And Ireland Terrestrial, Freshwater, Coastal And Marine,” 2019 (Ref 19).
b. Box, J (2017) An alternative approach to the reporting of categories of significant residual effects in Environmental Impact Assessment. CIEEM In Practice (Ref 31).

8.5 Assessment assumptions and limitations

8.5.1 This section provides a description of the assumptions and limitations to the Ecology and Biodiversity assessment.

8.5.2 The suite of ecological survey work undertaken focussed initially upon the Proposed Onshore Scheme EIA Scoping Boundary in order to inform early routing and siting, before focussing further on a draft proposed alignment developed late in 2023, which still encompassed the proposed Landfall Site at Walberswick and the Landfall Site at Southwold. Subsequently, the DOL was refined in late 2024, reflecting design development and representing a substantial reduction on the Proposed Onshore Scheme Scoping Boundary, including the discounting of the Landfall Site at Southwold and the associated proposed Underground HVDC Cable Corridor (refer to **Chapter 3 Alternatives and Design Evolution**).

8.5.3 The result is that survey data was collected over a wider area than the DOL as reported within the appendices. Only survey findings relevant to the assessment of the Proposed Onshore Scheme are reported within this PEIR Chapter. Surveys are ongoing and data gaps will be addressed through the targeted further survey effort outlined in **Table 8.14**.This will include areas that now fall within the DOL boundary, that due to design development, did not fall within the area covered by the surveys to inform this chapter of the PEIR, and will be included as appropriate within the forthcoming ES.

8.6 Baseline conditions

8.6.1 To provide an assessment of the likely significance of the Proposed Onshore Scheme (in terms of Ecology and Biodiversity), it is necessary to identify and understand the baseline conditions in the study area. This provides a reference point against which potential changes in Ecology and Biodiversity can be assessed.

Current baseline

8.6.2 It should be noted this PEIR represents a preliminary ecological assessment based upon the baseline data and design information available at the time of writing. It is therefore subject to change in the future based upon additional data and the evolving design information, which will be incorporated prior to inclusion within the Ecology and Biodiversity chapter of the ES.

8.6.3 **Table 8.12** outlines the key baseline information relevant to each of the features to be assessed in this PEIR. Full details of baseline conditions relating to these features are provided can be found within the respective baseline reports and their annexes appended to this chapter.

Table 8.12: Baseline conditions for features assessed within PEIR

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
Minsmere-Walberswick statutory designated sites	**Within**	Minsmere-Walberswick designated sites, which are largely encompassed by the same boundary within the areas of relevance. Comprising Minsmere to Walberswick Heaths and Marshes SAC, Minsmere-Walberswick SPA, Minsmere-Walberswick Ramsar site Minsmere-Walberswick Heaths and Marshes SSSI and Suffolk Coast and Heaths NNR, and FLL or other supporting habitat. The criteria for which each site is designated are summarised as follows: • Minsmere to Walberswick Heaths and Marshes SAC: Annex I habitats H1210 Annual vegetation of drift lines, H1220 European dry heaths, H4030 Perennial vegetation of stony banks (coastal shingle vegetation outside the reach of waves); • Minsmere-Walberswick SPA: Breeding avocet (*Recurvirostra avosetta*), breeding bittern, breeding and non-breeding gadwall (*Mareca strepera*), non-breeding greater white-fronted goose (*Anser albifrons albifrons*), non-breeding hen harrier (*Circus cyaneus*), breeding little tern (*Sternula albifrons*), breeding marsh harrier, breeding nightjar, breeding and non-breeding shoveler (*Spatula clypeata*), breeding teal (*Anas crecca*); • Minsmere-Walberswick Ramsar site: Mosaic of marine, freshwater, marshland and associated habitats, wetland bird assemblage – breeding, wetland invertebrate assemblage, wetland plant assemblage; • Minsmere-Walberswick Heaths and Marshes SSSI: aggregations of breeding and non-breeding birds of conservation concern, assemblages of breeding birds, numerous coastal, grassland, wetland and heathland habitats, invertebrate and vascular plant	**International** (SAC, SPA & Ramsar site) **National** (SSSI, NNR, Irreplaceable habitats)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		assemblages, population of the Schedule 8 plant, red-tipped cudweed (*Filago lutescens*); and • Suffolk Coast and Heaths NNR: Habitats including coastal floodplain grazing marsh (CFGM), acid grassland, coastal vegetated shingle, dry heaths, intertidal mudflats, lowland mixed deciduous woodland (LMDW), intertidal mudflats, reedbeds, saline lagoons, saltmarsh, shingle beaches, wet woodland. Overwintering and breeding birds, reptiles, invertebrates, flora, mammals and amphibians associated with the habitats above. Desk study and field surveys covering areas within and surrounding the parts of the designated sites of relevance to the Proposed Onshore Scheme indicate the confirmed or potential presence of: • Lowland dry acid grassland (HPI), LMDW (HPI), Scot's pine plantation and broadleaved plantation within the designation at Ten Acre Covert, west of the B1125; • Habitats – relevant to SAC, Ramsar, SSSI, NNR; • Lowland dry acid grassland (HPI) other neutral grassland and coniferous woodland) within the designated sites at Sallow Walk Covert, west of Walberswick; • Reedbed (HPI), coastal vegetated shingle (HPI and Annex 1 habitat), coastal sand dune (irreplaceable habitat, HPI), saline lagoons (HPI and Annex 1 habitat), coastal saltmarsh (irreplaceable habitat, HPI), scrub, and the tidal Dunwich River within the designated sites south of Walberswick. Desk study records of INNS Himalayan balsam (*Impatiens glandulifera*) and Japanese rose (*Rosa rugosa*) have been identified within wetland and sand dune habitats respectively; • Two veteran sweet chestnut (*Castanea sativa*) and an ancient oak (*Quercus robur*) within Hoist Covert;	

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• Breeding birds qualifying species - relevant to SPA, SSSI; • Breeding nightjar, qualifying feature of SPA, within and surrounding Ten Acre Covert; • Breeding woodlark, qualifying feature of SSSI, around Ten Acre Covert, Sallow Walk Covert and alongside the B1387; Breeding SPA qualifying species within wetland habitats associated with the tidal Dunwich River at the following distances from the DOL; gadwall (nest at 500m), bittern (nests at 520m and 610m) and marsh harrier (nest at 810m); • No indication of breeding birds on the beach area by common tern (*Sterna hirundo*) or little tern, but foraging and passage use of the inshore area by common, little and Sandwich tern (*Thalasseus sandvicensis*); • Breeding bird assemblage - relevant to Ramsar, SSSI, NNR • Breeding bird assemblage within and surrounding Ten Acre Covert including Schedule 1 species stone curlew and quail, as well as woodlark, dunnock (*Prunella modularis*) and common whitethroat (*Sylvia communis*); • A limited breeding bird assemblage within and surrounding Sallow Walk Covert and alongside the B1387, including yellowhammer (*Emberiza citrinella*) and linnet (*Linaria cannabina*); • A limited breeding bird assemblage of waders and wildfowl surrounding the tidal Dunwich River in proximity to the proposed Landfall Site, as well as breeding warblers and Schedule 1 Cetti's warbler (*Cettia cetti*) and bearded tit (*Panurus biarmicus*), as well as sedge warbler (*Acrocephalus schoenobaenus*), dunnock and linnet; • Wintering bird species – relevant to SPA;	

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important

		• Relatively large numbers of wintering shoveler associated with a farm reservoir 300m south of the DOL, to the west of Sallow Walk Covert (peak count of 250 birds in October 2023) – considered potential FLL;
		• Wintering bird assemblage - relevant to SSSI, NNR;
		• Notable wintering bird interest from flocks of foraging curlew (*Numenius arquata*) (peak count 80) and lapwing (*Vanellus vanellus*) (peak count 582) as well as small numbers of gulls and dunlin (*Calidris alpina*) associated with arable land adjacent to the designated sites stretching from the B1125 to the proposed Landfall Site;
		• Relatively large numbers of wintering gulls and ducks at times, including tufted duck (*Aythya fuligula*), gadwall and mallard (*Anas platyrhynchos*), associated with the farm reservoir adjacent to the designated sites at Sallow Walk Covert;
		• Flocks of teal throughout winter and small numbers of occasional wigeon (*Anas penelope*), with low numbers of other wildfowl and waders including shelduck (*Tadorna tadorna*), redshank (*Tringa totanus*), and spotted redshank (*Tringa erythropus*) surrounding the tidal Dunwich River;
		• Invertebrate assemblage:
		• Records of protected and/or notable invertebrates including:
		  • Narrow-mouthed whorl snail (*Vertigo angustior*);
		  • Various butterflies including small heath (Coenonympha pamphilus), grayling (*Hipparchia semele*), wall (*Lasiommata megera*), white admiral (*Limenitis camilla*), swallowtail (*Papilio machaon*);	

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• Various moths including grey dagger (*Acronicta psi*), knot grass (*Acronicta rumicis*), beaded chestnut (*Agrochola lychnidis*), green-brindled crescent (Allophyes oxyacanthae), mouse moth (*Amphipyra tragopoginis*), buff ermine (*Spilosoma lutea*), cinnabar (*Tyria jacobaeae*), flame wainscot (*Senta flammea*) and white-mantled Wainscot (*Archanara neurica*); • Green-eyed hawker dragonfly (*Aeshna isoceles*); • Reptile assemblage – relevant to NNR; • Records of adder (*Vipera berus*), common lizard (*Zootoca vivipara*), grass snake (*Natrix helvetica*) and slow-worm (*Anguis fragilis*); • Mammal assemblage – relevant to NNR; and • Records of water vole, otter, European hedgehog (*Erinaceus europaeus*), harvest mouse (*Micromys minutus*), European water shrew (*Neomys fodiens*).	
Marine statutory designated sites	**Within**	Designated sites which share significantly overlapping boundaries within the ZoI east of Walberswick are the Southern North Sea SAC, Outer Thames Estuary SPA, and FLL or other supporting habitat. The criteria for which each site is designated are summarised as follows: • Southern North Sea SAC: Harbour porpoise (*Phocoena phocoena*); and • Outer Thames Estuary SPA: Foraging areas for breeding common and little tern, non-breeding red-throated diver (*Gavia stellata*).	**International** (SAC, SPA)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		Desk study and field surveys covering areas within and surrounding the parts of the designated sites of relevance to the Proposed Onshore Scheme indicate the confirmed or potential presence of: • Breeding birds designating species – relevant to SPA; • Foraging and passage use of the inshore area by common, little and Sandwich tern; • Wintering birds designating species - relevant to SPA; and • Small numbers of red-throated diver recorded mainly at the edge of the inshore area when they took short flights and became visible.	
Pakefield, Benacre and Easton Bavents statutory designated sites	**2.5km**	Designated sites which share significantly overlapping boundaries within the ZoI north of Southwold. Comprising the Benacre to Easton Bavents Lagoons SAC, Benacre to Easton Bavents SPA, Pakefield to Easton Bavents SSSI, and Benacre NNR sites, and FLL or other supporting habitat. The criteria for which each site is designated are summarised as follows: • Benacre to Easton Bavents Lagoons SAC: Annex I habitats H1150 Coastal lagoons; • Benacre to Easton Bavents SPA: Breeding bittern, little tern and marsh harrier; • Pakefield to Easton Bavents SSSI: aggregations of scarce breeding birds including bittern, marsh harrier, little tern, bearded tit and water rail (*Rallus aquaticus*), non-breeding bittern, numerous coastal, wetland and saline lagoon habitats, the latter supporting nationally rare or scarce invertebrates starlet sea anemone (*Nematostella vectensis*), and the lagoonal sand shrimp (*Gammarus insensibilis*); and	**International** (SAC, SPA) **National** (SSSI, NNR)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• Benacre NNR: Habitats including brackish lagoons and marshes, saline lagoons, fen and swamp, shingle beaches, sandy cliffs and woods. Vascular plant communities and aggregations of breeding and non-breeding birds associated with the habitats above.	
Alde-Ore statutory designated sites	**1.5km**	Designated sites which share significantly overlapping boundaries within the ZoI south of Friston. Comprising the Alde-Ore and Butley Estuaries SAC, Alde-Ore Estuary SPA, Alde-Ore Estuary Ramsar site, Alde-Ore Estuary SSSI, Snape Warren SSSI, and FLL or other supporting habitat. The criteria for which each site is designated are summarised as follows: • Alde-Ore and Butley Estuaries SAC: Annex 1 habitats H1130 Estuaries, H1140 Mudflats and sandflats not covered by seawater at low tide, H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); • Alde-Ore Estuary SPA: Breeding and non-breeding avocet, breeding lesser black-backed gull (*Larus fuscus*), breeding little tern, breeding marsh harrier, non-breeding redshank, non-breeding ruff (*Calidris pugnax*), breeding Sandwich tern; • Alde-Ore Estuary Ramsar site: Wintering avocet and redshank, breeding lesser black-backed gull wintering and breeding waterbird assemblage, wetland invertebrate assemblage, wetland plant assemblage; • Alde-Ore Estuary SSSI: Botanical interest through a variety of habitats present including mudflats, saltmarsh, brackish lagoons, shingle beach, reedbeds, grassland, freshwater and brackish ditches each supporting notable species. Breeding and wintering bird assemblages including the largest breeding colony of	**International** (SAC, SPA & Ramsar site) **National** (SSSI)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		avocets in the UK. Notable invertebrates associated with saline lagoons and ditches, particularly the rare anthozoan; and • Snape Warren SSSI: Fine example of lowland heathland and acid grassland, supporting characteristic reptiles and birds including adder, common lizard and nightjar.	
Statutory designated sites east and south of Friston	**1.3km**	Designated sites which share considerably overlapping boundaries within the ZoI east and south of Friston. Comprising Sandlings SPA, Leiston - Aldeburgh SSSI, Sandlings Forest SSSI, Blaxhall Heath SSSI, The Haven, Aldeburgh LNR, and FLL or other supporting habitat. The criteria for which each site is designated are summarised as follows: • Sandlings SPA: Breeding nightjar and woodlark; • Leiston - Aldeburgh SSSI: Rich mosaic of habitats including acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. Breeding and wintering birds of conservation concern, as well as notable species of damselfly and dragonfly; • Sandlings Forest SSSI: Plantation woodlands on extensive sandy heathland, creating habitat for breeding nightjar and woodlark • Blaxhall Heath SSSI: A good example of dry lowland heathland and associated birds including nightjar and tree pipit (*Anthus trivialis*); and • The Haven, Aldeburgh LNR: Historic entrance to very active seaport that became landlocked as the soft coastline changed shape and new shingle bars developed. Behind the shingle, habitats including shallow lagoons and large reedbeds are present with associated species.	**International** (SPA) **National** (SSSI) **County** (LNR)
Other statutory designated sites	**1.3km**	All other statutory designated sites for nature conservation within the relevant ZoI, and FLL or other supporting habitat. The sites and the criteria for which they are designated are summarised as follows:	**International** (SAC)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• Orfordness – Shingle Street SAC: Annex 1 habitats H1150 Coastal lagoons, H1210 Annual vegetation of drift lines, H1220 Perennial vegetation of stony banks.; • Dew's Ponds SAC: Great crested newt; • Staverton Park and The Thicks, Wantisden SAC: Old acidophilous oak woods with pedunculate oak on sandy plains; • Dew's Ponds SSSI: 12 ponds supporting one of the largest known breeding populations of great crested newts in the UK. Various other amphibians and reptiles also breed on site; • Potton Hall Fields, Westleton SSSI: Population of Schedule 8 plant, red-tipped cudweed; • Sizewell Marshes SSSI: Important for large area of lowland, unimproved wet meadows which support outstanding assemblages of invertebrates and breeding birds. Several nationally scarce plants are also present; • Iken Wood SSSI: May well be the only ancient coppice wood on blown sand in Britain, with a distinctive flora typical of woods on light soils; • Gromford Meadow SSSI: Good example of an unimproved base-rich marsh on an alluvial soil with a high organic content, containing a species-rich assemblage of characteristic fen meadow and marshland plants; and • Westleton Heath NNR: Part of the best remaining tract of heathland in Suffolk, with representative species including tree pipit, Dartford warbler, stonechat, nightjar, nightingale (*Luscinia megarhynchos*) and woodcock (*Scolopax rusticola*). Additional features include adder, natterjack toad and the herptile assemblage, invertebrate assemblage and the woodland breeding bird assemblage.	**National** (SSSI,NNR)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
Knodishall Common CWS	**0.252**	Knodishall Common CWS supports a mosaic of HPI lowland heathland, woodland, open acid grassland, gorse scrub, lichen heath and the Hundred River. Habitats support nationally scarce plant species and typical acid grassland species, as well as providing opportunities for a wide diversity of terrestrial and aquatic invertebrates, including priority species. The woodland and scrub provides opportunities for birds of conservation concern including linnet, turtle dove (*Streptopelia turtur*), and nightingale.	**County**
Grove Wood CWS and AWI site	**Directly adjacent**	Grove Wood CWS is a semi-natural ancient woodland (irreplaceable habitat) with coppice and oak and ash (*Fraxinus excelsior*) standards. There is an ancient boundary ditch and bank with a hedgerow which supports a diversity of ground flora, including abundant primrose (*Primula vulgaris*).	**National** (Irreplaceable habitat) **County** (CWS)
Benhall Green Meadows CWS	**0.06**	Benhall Green Meadows CWS is a series of meadows which form one of the largest remaining areas of flower-rich marsh in the Alde catchment. The rich grassland flora includes notable colonies of southern marsh orchids (*Dactylorhiza praetermissa*). The floristic diversity has historically been maintained by traditional grazing.	**County**
CWSs and ancient woodland at Theberton	**0.012**	Comprised of the adjoining Kiln Grove and Meadow CWS, Theberton Woods CWS and Leiston Airfield CWS. Collectively the CWS are designated for semi-natural woodland including veteran trees (irreplaceable habitat) and associated ground flora with notable species. Ponds are present, some of which support great crested newt, and a population of reintroduced purple emperor butterfly (*Apatura iris*) is present. Dense boundary hedges provide habitat for farmland bird species including priority species bullfinch (*Pyrrhula pyrrhula*),	**National** (Irreplaceable habitat) **County** (CWS, HPI)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		yellowhammer and linnet. Leiston Airfield CWS citation states that this site consists of a mosaic of species-rich grassland and scrub with county notable plant species, however field surveys show that this is also established broadleaved woodland. Desk study and field surveys covering areas within and surrounding the designated sites adjacent to the Proposed Onshore Scheme indicate the confirmed or potential presence of: • Woodland comprising LMDW (HPI); • Parts of the woodlands classified as provisional ancient woodland by SBIS – Theberton Wood, Peckover Wood and Kiln Grove (irreplaceable habitat); • Breeding bird assemblage including nightingale, yellowhammer, dunnock, song thrush, cuckoo (*Cuculus canorus*), tree sparrow (*Passer montanus*), cirl bunting (*Emberiza cirlus*), reed bunting (*Emberiza schoeniclus*), corn bunting (*Emberiza calandra*), greenfinch (*Chloris chloris*), whitethroat and goldfinch (*Carduelis carduelis*); • Numerous potential veteran trees along the northern woodland edge (irreplaceable habitat); and • Records of notable plant species including bird's-nest orchid (*Neottia nidus-avis*).	
CWSs of Minsmere Valley	**Within**	Comprised of three adjacent CWS within the Minsmere River valley; Minsmere Valley Reckford Bridge to Beveriche Manor, Darsham Marshes and Minsmere Valley Eastbridge to Reckford Bridge CWS. Collectively the CWS are designated for a variety of wetland and riverine habitats, Suffolk notable wetland plants and assemblages of breeding birds including waders, warblers and barn owl. The area is also noted as	**National** (Irreplaceable habitat) **County** (CWS, HPI)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		an important resource for otter, harriers, aquatic invertebrates and amphibians. Grouping additionally includes supporting non-designated area between Mill Street and the Causeway, containing a Minsmere River Tributary 1 and priority wetland habitats contiguous with the CWS. Desk study and field surveys covering areas within and surrounding the designated sites adjacent to the Proposed Onshore Scheme indicate the confirmed or potential presence of: • Cluster of primarily wetland habitats, including the river itself. Habitats present are CFGM (HPI), lowland fen (irreplaceable habitat and HPI), wet woodland (HPI), Minsmere Old River (HPI watercourse), other wetland, other broadleaved woodland, wet ditches. INNS Himalayan balsam was identified within with the wetland habitats; • Notable wetland plants including water violet (*Hottonia palustris*) • Confirmed breeding of Schedule 1 species kingfisher (*Alcedo atthis*) and Cetti's warbler; • Potential breeding Schedule 1 species barn owl and hobby; • Confirmed common toad (*Bufo bufo*), common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*); and • Suitable habitats for otter.	
The Wilderness (Darsham) CWS	**0.015**	The Wilderness (Darsham) CWS is a mature secondary woodland with ponds, scrub, floristically diverse rides, glades and margins. The site is of value for breeding birds including species of conservation concern such as marsh tit (*Poecile palustris*), turtle dove and nightingale, as well as invertebrate interest including the scarce silver washed fritillary butterfly (*Argynnis paphia*). Great crested newt, grass snake and common lizard are present, as well as roosting and foraging bats. Field survey identified	**County** (CWS, HPI)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		the woodland as LMDW (HPI), with INNS rhododendron (*Rhododendron ponticum*) identified within with the wetland habitats.	
CWSs and ancient woodland at Hinton	**0.015**	Comprised of Big, Common and Haw Woods CWS and Hinton Long Spring CWS. Big, Common and Haw Woods are AWI sites (irreplaceable habitat and HPI) supporting species-rich ground flora typical of the habitats, with further habitat for mosses, fungi and invertebrates. Hinton Long Spring CWS is a small ancient woodland (irreplaceable habitat and HPI) dominated with hornbeam coppice. Field surveys identified that a large portion of the central area of the wood had been felled and colonised by dense bramble scrub. Directly linked to Hinton Long Spring is Hinton Round Spring (not designated). This woodland is classified as provisional ancient woodland by SBIS (irreplaceable habitat) as well as LMDW (HPI).	**National** (Irreplaceable habitat) **County** (CWS, HPI)
Walberswick Saltmarsh CWS	**0.144**	Walberswick Saltmarsh CWS contains saltmarsh (HPI), dune systems (irreplaceable habitat and HPI) and intertidal mudflats (HPI) along the Dunwich river, supporting scarce coastal plant species. The habitats support a range of specialist aquatic invertebrates including antlion (*Myrmeleontidae sp.*), small heath and wall butterflies. Site is important for wildfowl and waders, providing a high tide roost for lapwing and a valuable refuge for migrating birds such as linnet and snow bunting (*Plectrophenax nivalis*).	**National** (Irreplaceable habitat) **County** (CWS, HPI)
Other non-statutory designated sites	**0.543**	All other non-statutory designated sites occurring within the ZoI. Constitutes sites which are relatively distant from the DOL with limited hydrological connectivity. Sites are: • Southwold Denes CWS; • Dunwich Forest CWS;	**County**

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• Blythburgh Marshes CWS; • Havenbeach Marshes CWS; • Westleton Common and Adjacent Habitat CWS; • Kelsale Morio Meadow CWS; • Holly Hills Wood CWS and ancient woodland; • Knodishall Whin CWS; • Roadside Nature Reserve (RNR) 102 CWS; • Reydon Marshes CWS; • Manor Farm Meadows CWS; • Buckle's Wood CWS; • Church Farm Marshes CWS; • Blackheath CWS; • Church Common CWS; • Buss Creek CWS; • Reydon Fishing Lakes CWS; • Wenhaston Church Common CWS; • RNR 197 CWS; • St Felix School Grounds CWS; • RNR 216 CWS; • Dingle Marshes RSPB Reserve; and • Minsmere RSPB Reserve.	
Hundred River at Colfair Green	**Within**	Section of the Hundred River, a main watercourse, adjacent to School Road at Coldfair Green. Runs dry for the majority of the year and colonised by terrestrial vegetation. Desk study and Sea Link field survey identified no protected or notable macrophyte species, though INNS species Himalayan balsam was associated with the riparian channel.	**Local** (Watercourse)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
Lowland meadow north of the B1119	**Within**	Cluster of fields comprising lowland meadow (HPI) south east of Saxmundham, adjacent to the B1119.	**County**
Habitats within and surrounding Harris's Belt and Pit	**Within**	Two small blocks of LMDW (HPI) – Harris's Belt and Harris's Pit. Associated habitats include pond, an ecologically valuable line of trees, plantation woodlands and several mature standard trees. Sea Link identified the presence of a veteran oak (T791S) and veteran ash (T771S) within Harris's Belt, a veteran standard oak on the edge of plantation (T822S), as well as an ancient oak within the ecologically valuable line of trees (T776S) - all irreplaceable habitats.	**National** (Irreplaceable habitat) **County** (HPI) **Local** (Other habitats)
River Fromus and associated habitats	**Within**	Land south of Saxmundham, encapsulating the River Fromus and habitats associated with the riparian corridor. Sea Link identified: • The River Fromus, a main watercourse; • An associated wet ditch with aquatic and marginal vegetation; • Plantation woodland, formed of cricket bat willow (*Salix alba* var. *caerulea*); • Small blocks of semi-natural woodland (HPI) neutral grassland; • Three veteran oaks (T869S, T870S, T875S), a veteran ash (T891S), an ancient horse chestnut (T871S) and an ancient alder (T856S) - all irreplaceable habitats; • Neutral grassland including a population of common spotted (*Dactylorhiza fuchsii*) and southern marsh orchids; and • INNS Himalayan balsam was associated with the riparian zone. Desk study identified further INNS species Japanese knotweed (*Reynoutria japonica*) and variegated yellow archangel (*Lamiastrum*	**National** (Irreplaceable habitats) **County** (HPI, watercourse) **Local** (Other habitats)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		galeobdolon argentatum) associated with the riparian channel in proximity.	
Habitats between Moat Road and Pretty Road	**Within**	Habitats between Moat Road and Pretty Road encompassing LMDW (HPI), non-HPI woodland, several fields of modified grassland, mature hedgerows with trees, ecologically valuable line of trees, blackthorn scrub, cropland and two ponds (HPI).	**County** (HPI) **Local** (Non-HPI woodland, hedgerows, treelines, scrub, ponds)
Habitats between Pretty Road and Hawthorn Road	**Within**	Habitats between Pretty Road and Hawthorn Road encapsulating a field of lowland meadow (HPI), four blocks of LMDW (HPI), non-HPI woodland, ponds, several mature hedgerows and tree lines, several potential veteran trees (irreplaceable habitat), dense scrub banks, neutral grassland, modified grassland, and cropland.	**National** (Irreplaceable habitat) **County** (HPI) **Local** (Non-HPI woodland, hedgerows, treelines, scrub, ponds, neutral grassland)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
Plantation woodland east of Middleton Moor	**Within**	Immature mixed coniferous and broadleaved plantation woodland east of Middleton Moor, supporting a large population of common spotted orchid.	**Local**
Habitats north of Hinton Road	**Within**	Several ecologically valuable lines of trees bordering and north of Hinton Road, as well as a large pond, cropland and modified grassland. Includes a single veteran oak tree within one of the tree lines (irreplaceable habitat).	**National** (Irreplaceable habitat) **Local** (Pond)
Minor watercourses	**Within**	Minor watercourses crossed by the DOL. Each of the minor tributaries described constitute largely dry watercourses functioning primarily as an agricultural drains at the point of crossing. This includes: • River Fromus tributary. A dry watercourse functioning as an agricultural drain. Desk study identified INNS giant hogweed (*Heracleum mantegazzianum*) associated with the riparian channel in proximity; • Two unnamed tributaries of the Hundred River between Saxmundham and Theberton; • An unnamed tributary of the Minsmere Old River south of Middleton Moor; and • A section of the Dunwich River south of Hinton.	**Local**
Other ancient and veteran trees	**Within**	Veteran and ancient trees (irreplaceable habitat) within and surrounding to the DOL falling outside of other specified feature groupings. These include:	**National** (Irreplaceable habitat)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• An ancient pedunculate oak in a hedgerow north of Friston identified by Sea Link (T524S); • A standard veteran pedunculate oak adjacent to a farm track north west of Friston identified by Sea Link (T655S); • Two veteran field maple (T671S, T668S) and one veteran pedunculate oak (T667S) within a small unnamed woodland copse west of Fristonmoor Lane identified by Sea Link; • A standard veteran pedunculate oak adjacent to a farm track north west of Friston identified by Sea Link (T674S); • A veteran ash within a dense boundary tree line associated with Bloomfields Covert identified by Sea Link (T809S); • A veteran pedunculate oak within a hedgerow south of the B1119 identified by Sea Link (T733S); • A standard veteran pedunculate oak immediately north of Bloomfields Covert identified by Sea Link (T843S); • A veteran ash (T841S) on the northern border of Bloomfields Covert identified by Sea Link; • Two veteran ash (T861S, T862S) within Coltsclose Pickle identified by Sea Link; • Three veteran pedunculate oaks (T916S, T940S, T941S) and a veteran hornbeam (T938S) adjacent to a farm track north west of Friston identified by Sea Link; • Two veteran pedunculate oaks (T522S, T525S) within hedgerows north of Friston identified by Sea Link; • A veteran pedunculate oak (T974S) within a hedgerow north of Grove Wood identified by Sea Link; • A potential veteran pedunculate oak within a tree line connecting Darsham Road to The Wilderness (Darsham) CWS woodland; and	

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• A veteran pedunculate oak immediately adjacent to Hinton Road, north of Ten Acre Covert. Feature grouping also covers ancient and veteran trees within the wider landscape up to 200m from the DOL for air quality impacts.	
Other woodlands	**Within**	Woodlands within and surrounding the DOL falling outside of other specified ecological features. This includes: • LMDW – unnamed block at the junction of the A1094 and B1069 (HPI); • LMDW – Laurel Covert (HPI). Sea Link identified a veteran oak and a veteran ash (irreplaceable habitat) at the southern extent of the woodland; • LMDW – Rudley's Grove and New Covert (HPI). Rudley's Grove is classified as provisional ancient woodland by SBIS (irreplaceable habitat); • LMDW – two unnamed blocks west of Fristonmoor Lane (HPI); • LMDW – unnamed block at the junction of B1119 and Fristonmoor Lane (HPI); • LMDW - Bloomfields covert (HPI); • LMDW - Coltsclose Pickle (HPI). Classified as provisional ancient woodland site by SBIS (irreplaceable habitat); • Mixed woodland – Kelsale Covert; • Broadleaved woodland – two unnamed blocks north of Harrow Lane; • LMDW – The Forest (HPI). Classified as provisional ancient woodland site by SBIS (irreplaceable habitat); • Broadleaved woodland – Triangle Wood, north of Hawthorn Road; • LMDW - unnamed block adjacent to Lymball's Lane (HPI);	**National** (Irreplaceable habitats) **County** (HPI) **Local** (Other habitats)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		• LMDW – unnamed block surrounding a pond north of Lymball's Lane (HPI); • Broadleaved woodland – unnamed block north of Bowman's Lane; • Broadleaved woodland – unnamed block adjacent to Hinton Road; • Broadleaved woodland – unnamed linear block south of B1387; • LMDW - Woodland surrounding Hurts Hall (HPI). Classified as provisional ancient woodland by SBIS (irreplaceable habitat) • Parkland - Hurts Hall Park. Classified as provisional ancient woodland by SBIS (irreplaceable habitat); and • Feature grouping also covers ancient woodland (AWI and provisional ancient woodland from SBIS) within the wider landscape up to 200m from the DOL for air quality impacts.	
Other hedgerows and tree lines	**Within**	Hedgerows and tree lines within the DOL falling outside of other specified ecological features.	**County**
Badger social group associated with land north of Redhouse Farm, Sternfield	**Within**	Badger social group associated with land north of Redhouse Farm, Sternfield. Incorporates a main sett (sett E) and its associated annexe (sett F) and the surrounding land utilised for foraging, commuting and containing further setts.	**Local**
Other badger social groups	**Within**	All other badger social groups associated with the DOL, considered to constitute foraging use and non-main setts only.	**Local**
Reptile populations associated with	**Within**	Low populations of grass snake and common lizard associated with young plantation woodland at Middleton Moor.	**Local**

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
the plantation at Middleton Moor			
Reptile populations associated with the Minsmere Old River Floodplain	**Within**	Populations of reptiles associated with the Minsmere Old River floodplain. Desk study records indicate the presence of grass snakes.	**County**
Other reptile populations	**Within**	All other reptile populations associated with the DOL. Considered to constitute small numbers of individual widespread reptile species (slow-worm, common lizard, grass snake and adder) potentially associated with agricultural field margins or fallow land, particularly where these are adjacent to areas of semi-natural habitats. Surveys conducted by Sea Link identified no reptiles within the agricultural margins surrounding the proposed Converter Station Site.	**Local**
Bats: Annex II species	**Within**	No barbastelle roosts were identified within the DOL or within the wider Proposed Onshore Scheme EIA Scoping Boundary (which was of relevance at the time of survey). The closest barbastelle roosts (confirmed through Advanced Licence Bat Survey Techniques (ALBST)) were identified approximately 6km west of the Proposed Onshore Scheme. A further barbastelle roost was indicated (through activity survey emergence times) in proximity to the proposed Converter Station Site; however, the roost was not verified identified through ALBST. A review of Sea Link survey data also suggests a barbastelle roost may be present, most likely within Bloomfield's Covert to the south of the proposed Converter Station Site. Barbastelle were recorded widely across the Proposed Onshore Scheme (during the activity surveys) and	**District**

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		habitats within the DOL are likely to be broadly associated with the off-site roosts for commuting and foraging. No other Annex II bat species were identified.	
Bats (non-Annex II) species categorised as rarer or with a restricted distribution	**Within**	This grouping includes serotine (*Eptesicus serotinus*), Leisler's bat (*Nyctalus leisleri*) and Nathusius' pipistrelle (*Pipistrellus nathusii*). No Leisler's bat or Nathusius pipistrelle roosts were identified within the DOL or within the wider Proposed Onshore Scheme EIA Scoping Boundary. One solitary serotine roost was identified in proximity to Friston, within 50m of the DOL. Each of the three species within this group were recorded across the Proposed Onshore Scheme. Serotine being the most frequently encountered, followed by Nathusius pipistrelle and Leisler's bat. Leisler's bat was the most infrequently recorded species of bat overall but was still widespread across the study area.	**District**
Bats (non-Annex II) categorised as widespread but not abundant	**Within**	This grouping includes Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*) and noctule (*Nyctalus noctula*). No Daubenton's bat or noctule roosts were recorded within the DOL or wider Proposed Onshore Scheme EIA Scoping Boundary. Two Natterer's bat maternity roosts were identified within the wider Proposed Onshore Scheme EIA Scoping Boundary. Each of the three species within this group were recorded across the Proposed Onshore Scheme at varying frequencies. Noctule was most frequently encountered, followed by Daubenton's bat and Natterer's bat, both of which were confirmed to species level using ALBST; static detector surveys limited these species to the *Myotis* genus.	**County**

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
Bats (non-Annex II) which are categorised as widespread	**Within**	This grouping includes common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared bat (*Plecotus auritus*). Two common pipistrelle and three soprano pipistrelle maternity roosts were identified within the Proposed Onshore Scheme EIA Scoping Boundary but outside of the DOL. An additional common pipistrelle maternity roost was identified within 50m of the DOL near Friston. Two unknown brown long-eared bat roosts and one solitary roost were identified within the wider Proposed Onshore Scheme EIA Scoping Boundary. One maternity roost was located inside the DOL in Sallow Walk Covert, which is a proposed HDD location, with an additional maternity roost identified within 50m of the DOL near Friston. Each of the three species within this group were recorded across the Proposed Onshore Scheme at varying frequencies. Common pipistrelle was the most frequently encountered species across the Proposed Onshore Scheme, followed closely by Soprano pipistrelle. Brown long-eared bat was infrequently recorded, but widespread.	**County**
Breeding birds – Passage and breeding associated with inshore and beach habitats	**Within**	Non-designated breeding bird features of inshore and beach habitats off the coast of Walberswick over the passage and summer period (April – September). Key results include mostly distant but occasionally inshore, by groups of common scoter (*Melanitta nigra*) (peak count 1,300), with sporadic presence of low numbers of cormorants (*Phalacrocorax Carbo*), eider (*Somateria mollissima*) and guillemot (*Uria aalge*), as well as use of inshore areas by various gulls (herring gull (*Larus argentatus*), lesser black-backed gull, great black-backed gull (*Larus marinus*), common gull (*Larus canus*), black-headed gull (*Chroicocephalus ridibundus*)) throughout the survey period. One surf scoter (*Melanitta perspicillata*) was recorded in April.	**County** (Surf scoter) **Local** (Other species)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
Breeding waterbird and wetland birds	**Within**	Waterbird and wetland bird species not associated with other feature groupings, including designated sites: Cetti's warbler, kingfisher, mallard, oystercatcher (*Haematopus ostralegus*), reed bunting, moorhen (*Gallinula chloropus*), gadwall.	**Local**
Breeding birds - associated with farmland habitats	**Within**	Farmland bird species not associated with other feature groupings, including designated sites: whitethroat, yellowhammer, rook (*Corvus frugilegus*), stock dove (*Columba oenas*), greenfinch, skylark (*Alauda arvensis*), linnet, yellow wagtail (*Motacilla flava*) and marsh harrier.	**Local**
Breeding birds - associated with woodland habitats	**Within**	Woodland bird species not associated with other feature groupings, including designated sites: marsh tit, dunnock, goshawk, tawny owl (*Strix aluco*), song thrush (*Turdus philomelos*), nightingale.	**County** (Marsh tit, goshawk, nightingale) **Local** (Other species)
Breeding birds - other breeding birds of conservation concern	**Within**	Red-listed bird species not associated with other feature groupings, including designated sites, and not grouped based on habitat: house sparrow (*Passer domesticus*), house martin (*Delichon urbicum*), cuckoo, hobby (*Falco subbuteo*) and mistle thrush (*Turdus viscivorus*).	**Local**
Wintering birds - inshore and beach habitats	**Within**	Non-designated wintering bird features of inshore and beach habitats south of Walberswick. Key results include a main wintering area for a flock of common scoter (peak count 400 individuals), wintering with species of wildfowl at times with up to three velvet scoter (*Melanitta fusca*), smaller numbers of pintail (*Anas acuta*), shoveler, teal, long-tailed duck (*Clangula hyemalis*), and a Slavonian grebe (*Podiceps auritus*).	**County** (Long-tailed duck, Slavonian grebe, velvet scoter)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
		Other species recorded included: cormorant, great black-backed gull, great crested grebe (*Podiceps cristatus*) and herring gull.	**Local** (Other species)
Other wintering birds	**Within**	Non-designated wintering bird species associated with all other habitats away from the inshore and beach habitat: black-headed gull, common gull, cormorant, gadwall, golden plover (*Pluvialis apricaria*), grey heron (*Ardea cinerea*), lapwing, little egret (*Egretta garzetta*), mallard, moorhen, teal, scaup (*Aythya marila*), and water rail.	**County** (Scaup) **Local** (All species, except grey heron and moorhen)
Amphibians (excluding great crested newts)	**Within**	All common amphibian species associated with habitats within and adjoining the DOL where not considered as part of other feature groupings. Includes all waterbodies (considered potential breeding sites) and associated terrestrial habitats. Desk study records and field survey indicate the presence of common toad, common frog and smooth newt.	**Local**
Aquatic fauna associated with the Hundred River	**Within**	Aquatic fauna (fish, aquatic invertebrates) associated with the Hundred River adjacent to School Road at Coldfair Green. Sea Link field surveys found the watercourse at this point was dry with only terrestrial vegetation present. Historic EA fish sampling of the watercourse downstream at Knodishall Common identifying only three-spined and ten-spined stickleback.	**Local**
Aquatic fauna associated with the River Fromus	**Within**	Aquatic fauna (fish, aquatic invertebrates) associated with the River Fromus and connected ditch south of Saxmundham. Sea Link field survey identified only three-spined stickleback as the fish assemblage, though historic EA sampling identified European eel (*Anguila anguila*) (SPI) further upstream at Saxmundham.	**County** (European eel) **Local** (Other features)
Aquatic fauna associated with	**Within**	Aquatic features (fish, aquatic invertebrates) associated with the Minsmere Old River and associated ditch network. Desk study and field	**Regional** (Spined loach)

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
the Minsmere Old River		survey indicate the confirmed presence of European eel (SPI), brown trout (*Salmo truta*) (SPI) three-spined stickleback (*Gasterosteus aculeatus*), nine-spined stickleback (*Pungitius pungitius*) and spined loach (*Cobitis taenia*).	**County** (Brown trout and European eel) **Local** (Other features)
Aquatic fauna associated with the tidal Dunwich River	**Within**	Aquatic features (fish, aquatic invertebrates), associated with the tidal Dunwich River south of Walberswick. Field survey identified the presence of European eel, thick-lip grey mullet (*Chelon labrosus*), European seabass (*Dicentrarchus labrax*), golden-grey mullet (*Liza aurata*), common goby (*Pomatoschistus microps*), three-spined stickleback and nine-spined stickleback.	**County** (European eel) **Local** (Other features)
Aquatic fauna associated with minor watercourses	**Within**	Aquatic features (fish, aquatic invertebrates), associated with minor watercourses crossed by the Proposed Onshore Scheme, consisting highly modified minor tributaries which are dry for the majority of the year, functioning primarily as agricultural drainage ditches. Sea Link field survey found the River Fromus tributary was seasonally dry with only terrestrial vegetation present, though supporting an aquatic invertebrate community typical of habitats which dry out in the summer months. Considered to support low value assemblages of aquatic features.	**Local**
Otter/water vole associated with	**Within**	Otter and water vole populations, associated with the Hundred River at School Road, Coldfair Green (identified from desk study).	**County**

Ecological feature/grouping and name	Nearest distance to DOL (km)	Ecological feature/feature grouping description, with key baseline conditions	Geographic level at which features are important
the Hundred River			
Otter/water vole associated with the River Fromus	**Within**	Otter and water vole populations associated with the River Fromus and associated connected riparian channel south of Saxmundham. Sea Link field survey identified the presence of otter on the Fromus and water vole in the associated ditch.	**County**
Water vole associated with the Minsmere Old River	**Within**	Water vole population within with the Minsmere Old River floodplain, identified through desk study and field survey (and not included within the citations for CWS of Minsmere Valley).	**County**
Other priority species	**Within**	All remaining populations of protected and/or notable fauna not considered elsewhere, associated with habitats within and adjoining the DOL, primarily agricultural. Desk study records and field survey indicate the confirmed or potential presence of brown hare (*Lepus europaeus*), hedgehog, polecat (*Mustela putorius*), European water shrew. Considered likely to constitute only small numbers of individual animals utilising habitats sporadically.	**Local**

Future baseline

8.6.4 Relative to the current baseline, the future ecological baseline is not expected to change materially before the construction stage. Management of the largely agricultural habitats is unlikely to change fundamentally over this period, and consequently no significant degradation or improvement of habitat condition is expected. Due to increasing development and agricultural pressures year on year within the wider landscape, protected and notable species and habitats are likely to remain priorities for conservation within future baseline scenarios. Subtle changes are expected due to climate change, such as some movements of certain species and local population changes. However, the overall habitats and species composition in the study area are expected to be broadly similar to that of the existing baseline in the absence of new infrastructure.

8.6.5 To the east of Theberton Wood, former arable fields have been released from intensive agricultural management resulting in habitats in early successional stages. The future baseline is likely to include an increase in biodiversity value on this land. By the period of decommissioning for the Proposed Onshore Scheme, this land has potential to develop habitats of Local to County value if it continues to be managed primarily for nature conservation rather than intensive agriculture.

8.7 Embedded design mitigation and control measures

Design and embedded mitigation measures

8.7.1 As described in **Chapter 2 Description of the Proposed Scheme** of this PEIR, a range of measures have been embedded into the Proposed Scheme design to avoid or reduce environmental effects. These primary mitigation measures form part of the design that has been assessed, which for Ecology and Biodiversity are listed in **Table 8.13**.

Control measures

8.7.2 Preliminary control measures are set out in **Appendix 2.1 Outline Onshore CoCP** which will manage the effects of construction. The measures of particular relevance to Ecology and Biodiversity are summarised in **Table 8.13**.

Table 8.13: Design and embedded mitigation and control measures relevant to Ecology and Biodiversity.

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
Design and embedded mitigation measures		
EM1	The introduction of trenchless techniques to avoid sensitive ecological features which are unavoidably crossed by the proposed Underground Cable Corridor, including watercourses and their floodplains, HPIs, valuable hedgerows and tree lines, as well as designated sites.	Embedded mitigation by design
EM2	Micro-siting and routing of cabling, construction areas and access routes to avoid sensitive features such as woodlands, veteran trees standard trees and HPI with appropriate buffers.	Embedded mitigation by design
EM3	Option to co-locate construction access and proposed Underground HVAC Cable Corridor with Sea Link.	Embedded mitigation by design
EM4	Option to locate the proposed Underground HVDC Cable within Sizewell Link Road construction corridor	Embedded mitigation by design
EM5	The risk of frac-out will be mitigated through design by undertaking ground investigation to determine the soil properties and understand if natural fissures could be present along the borehole alignment. This will include factoring in verified geology from ground investigation boreholes to provide a detailed hydrofracture analysis and calculation. This information will inform the design of trenchless methods at suitable depths to minimise the risk of frac-out.	Embedded mitigation by design
Control measures to avoid/ reduce impacts to Ecology and Biodiversity features		
BD1	Where cable sections installed by trenchless techniques have been identified to avoid valuable ecological features, no construction activities (including storage of materials) will occur unless it can be confirmed by an Ecological Clerk of Works (ECoW) that such works would avoid those features and an appropriate buffer.	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
BD2	Where habitats or species of ecological value within or adjacent to the DOL are to be retained but are not avoided by trenchless techniques, installation of suitable fencing will be used to implement buffer zones and areas of no deviation to protect retained habitats and species. No construction activities (including storage of materials) will be permitted within Root Protection Area (RPA) of a retained tree or buffer zone during construction. Suitable minimum buffers are likely to include: • Veteran tree buffer (tree specific) following arboricultural advice and Natural England Guidelines; • Retained trees - canopy and RPA tree specific following arboricultural advice; • 2m buffer along retained hedgerows to maintain a grass strip; • 15m to sensitive habitats such as HPIs; • 5m buffer to ponds and waterbodies; • 30m buffer from badger setts; and • Schedule 1 breeding bird nests - species and context dependent, following ornithological advice and published guidance where available	Outline Onshore CoCP
BD3	Clearance of vegetation will be supervised by an ECoW, with appropriate consideration given to protected and/or notable species with potential for harm or disturbance based on the location and/or timing of clearance. This will include avoidance of sensitive periods altogether wherever feasible (for example minimising clearance within the breeding bird season).	Outline Onshore CoCP
BD4	Implementation of 'Check, Clean, Dry' (Ref 32) biosecurity practice to mitigate potential mobilisation of invasive aquatic plant species, and chytrid fungus which affects amphibians. Supervision to be undertaken by a suitably experienced ecologist. Additional biosecurity measures such as the use of suitable Defra approved disinfectants may also be required.	Outline Onshore CoCP
BD5	Temporary fencing will be installed prior to construction works to exclude fauna from working areas, including compounds. Temporary fencing should be of a suitable specification to exclude all species at risk of ingress in specific locations and may be phased as the Proposed Onshore Scheme progresses. Where excavations have been left uncovered or there is a risk	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
	of animal entrapment, a means of escape (for example ramp) will be left in open excavations overnight.	
BD6	Work during hours of darkness will be avoided as far as practicable in proximity to sensitive nocturnal ecological features. Where lighting is essential, proposals would be developed to manage impacts to sensitive nocturnal ecological features, through measures such as: • Temporary lighting used for construction will be switched-off when not in use and positioned so as not to spill on to adjacent land, watercourses, sensitive features or key bat flight lines within the area surrounding the works; • Lighting levels around construction compounds will be kept to the minimum necessary for security and safety by the contractor, including use of directional lighting and/or shielding to avoid ecological features where necessary; and • Dark conditions (i.e. absence of artificial illumination) will be maintained within proximity of sensitive features (location specific) such as bat roosts or barn owl nest sites.	Outline Onshore CoCP
BD7	In areas where construction of the Proposed Onshore Scheme may cause disturbance impacts to ecological features in adjacent retained land, such as breeding and/or wintering birds, efforts will first be made to avoid impacts through timing of works outside of sensitive periods as far as reasonably practicable.	Outline Onshore CoCP
BD8	The Principal Contractor will manage impacts from construction on ecological resources through the following measures to: • Manage dust, air pollution and exhaust emission during construction including appropriate dust suppression; • Employ standard pollution prevention measures during construction to avoid pollution of the general water environment; • Construction drainage design following Sustainable Drainage System principles to manage quality and quantity of construction stage drainage; and • Control construction noise, vibration and lighting pollution.	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
BDYY	The Principal Contractor will manage impacts from construction on groundwater dependant ecosystems, through the following measures, including: • Drainage designed not to increase flood risk on third party land, including ecological sites; • Dewatering activities undertaken in line with appropriate licences and permits; • Groundwater control operations to be non-consumptive with water maintained in water environment, where feasible; • Specific mitigation at designated and non-designated Groundwater Dependent Terrestrial Ecosystems (such as discharge/recharge arrangements) to be informed by hydrogeological impact assessment at ES stage; and • Water monitoring plan to be developed by contractor.	Outline Onshore CoCP
BD9	The Principal Contractor will minimise the risk, and reduce the impacts, of frac-out of drilling fluid during trenchless proposed Underground Cable installation to reduce impacts to ecological features (including European sites), through the following construction measures to: • Ensure rapid detection of frac-out and immediate cessation of drilling operations; • Contain drilling fluid spills; and • In the worst-case scenario of a frac-out (considered to constitute 25 square metres of inert clay-based drilling fluid deposited), clean up spills ensuring minimal environmental impact. For all trenchless proposed Underground Cable sections within boundaries of the Minsmere-Walberswick designated sites (SAC, SPA, Ramsar site, SSSI) the control measures for frac-out will be agreed with ESC, following consultation with Natural England	Outline Onshore CoCP
BD10	Reduced working widths at sensitive crossing points (that cannot be avoided entirely by Commitment EM1 or EM2), such as hedgerow field boundaries, will be assessed on a case-by-case basis but typically be reduced to the widths in the table below: • HVDC trench – 19.5m (no stockpiles); • HVAC trench - 27m (no stockpiles); and	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
	• HVAC trench with another project (for example Sea Link) – 52m (no stockpiles). In locations where the construction corridor crosses boundary features such as hedgerows and lines of trees, the construction corridor will target available gaps between mature trees, so that the corridor minimises the loss of mature trees, unless there are other constraints that prevent such avoidance.	
BDXX	Where vegetation loss or reduction is required to facilitate construction accesses, including at bell mouths to provide sufficient visibility splays for construction traffic, assessment will be made on a case-by case basis for the potential for alternative methods to reduce the extent of vegetation loss, such as the use of suitable traffic management. This will particularly focus on ensuring the retention of valuable ecological features which are not feasible to reinstate, such as mature trees.	Outline Onshore CoCP
BD11	Where sections of hedgerow are removed, and are ecologically worth preserving, they should be removed in sections, retaining intact root balls for reinstatement where possible. This will speed up the restoration process.	Outline Onshore CoCP
BD12	Where land is not required for construction, for example for habitat compensation purposes or BNG, early habitat creation or enhancement will be undertaken in the first 12 months of the programme, in accordance with details set out in the Environmental Masterplan and Landscape and Ecology Management Plan (LEMP) which will form an appendix to the CoCP.	Outline Onshore CoCP
BD13	Where removal of sections of hedgerow that provide key wildlife corridors are necessary (for example for bat commuting), ‘dead hedging’ should be used, where practicable, in the interim periods to retain connectivity during and immediately following construction. Dead hedging can comprise vegetation arisings or artificial provision, such as willow screening panels or Heras fencing covered in camouflage netting.	Outline Onshore CoCP
BD14	The Principal Contractor will comply with relevant protected species legislation. Appropriate licences will be obtained where necessary from Natural England for all works affecting protected species as identified by the ES and through pre-construction surveys. All applicable	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
	works will be undertaken in accordance with the relevant requirements and conditions set out in those licences. Key licensable works are outlined below: • Closures of badger setts, including prior provision of a suitable artificial sett in the case of a main sett closure • Capture and exclusion exercise for unavoidably lost bat roosts (considered only to constitute lower-value roosts for individual bats), with salvage of roost feature where possible to strap to a suitable nearby tree • Soft felling of trees where the potential for roosting bats could not be ruled out after survey • Displacement exercise for water vole, or where this is unsuitable, a trapping and soft-release exercise	
BD15	Where habitats supporting widespread reptile species are unavoidably lost, a translocation exercise is likely to required, excepting where the only potential reptile habitat to be impacted was a narrow corridor habitat (such as grassland field margins), connected to adjacent suitable retained habitat. In this scenario habitat manipulation using appropriately timed and supervised two-staged vegetation reduction to displace reptiles to adjacent retained habitat would be appropriate.	Outline Onshore CoCP
BD16	Potential reptile and amphibian hibernacula will be retained and protected during construction where practicable. If unavoidable, the removal of vegetation and groundworks at potential hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided.	Outline Onshore CoCP
BD17	In areas where construction of the Proposed Onshore Scheme may cause disturbance impacts to ecological features in adjacent retained land, such as breeding and/or wintering birds, which cannot be avoided through timing of the works, suitable noise and/or visual barriers will be put in place. The position, size and type of barriers will be dictated by the specific ecological features impacted and the nature of works occurring. This will include the use of barriers to minimise impacts to bird species using European sites.	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
BD18	Appropriate measures for the treatment and control of INNS will be implemented as per the Wildlife and Countryside Act 1981. Measures will be followed, such as: • Any plant or machinery that has been used in areas infested with invasive species (both terrestrial and aquatic), such as Japanese knotweed and Himalayan balsam, will be thoroughly cleaned, checked and dried; • Water used to clean vehicles will be controlled to prevent the spread of the plant (including through seeds, rhizomes, fragments). This area will be cordoned off to prevent inadvertent spreading; • Construction staff and visitors to site will undergo the appropriate invasive species training; and • Biosecurity measures during construction within aquatic environments will prevent the spread of INNS in these environments.	Outline Onshore CoCP
BD19	All mitigation, compensation and enhancement planting will be delivered as shown on the Environmental Masterplan and delivered and managed as detailed in the LEMP (an appendix to the CoCP). Where feasible, planting will utilise material harvested from local sources of high biodiversity value (for example green hay for grasslands). Where not feasible, planting of remaining habitats will comprise species of local provenance to maintain or enhance existing biodiversity features.	Outline Onshore CoCP
BD20	Where linear habitat features require removal for proposed Underground Cable construction and/or haul roads, the features will be reinstated afterwards to maintain landscape-scale ecological connectivity across the proposed Underground Cable Corridor which will intersect with many linear habitat features. The proposed Underground Cable will require a permanent easement which will place a restriction on the planting of trees within approximately 7.5m from the centreline of the outermost trench. However, the planting of shallow rooted shrubs and hedgerows will be permitted within the easement and continuous hedgerows can therefore be reinstated, with tree spacing to respect the easement requirements.	Outline Onshore CoCP

Commitment reference code	Design and embedded mitigation and control measures	Mechanism through which commitment is secured
BD21	Where semi-mature and mature trees are lost as part of boundary crossings, planting of compensatory trees will occur within the same boundary feature wherever feasible, outside of the proposed Underground Cable easement, i.e. within or adjacent to retained sections of hedgerow that occur within the LoD.	Outline Onshore CoCP

8.7.3 Pre-construction surveys will be undertaken for protected or notable species or to identify INNS (including aquatic species), to identify changes to baseline conditions prior to the setting out of construction areas and associated clearance of vegetation or groundworks. Pre-construction surveys will be undertaken in suitable species-specific locations and time periods in advance of works commencing to allow for suitable mitigation measures and/or appropriate licences to be obtained.

8.8 Assessment of effects

8.8.1 This section presents the preliminary assessment of likely significant effects on Ecology and Biodiversity resulting from the construction, operation and maintenance, and decommissioning of the Proposed Onshore Scheme. The likely significant effects of the Proposed Onshore Scheme are identified taking into account the embedded design mitigation and control measures.

8.8.2 For the majority of ecological features there is no difference in the likely significant effects anticipated for the two assessment scenarios (Amendment to Kiln Lane Substation Scenario and Full Build Out of Kiln Lane Substation Scenario) for the Proposed Onshore Scheme.

8.8.3 Following assessment further mitigation is proposed as required which is presented in **Section 8.9**.

Construction

Minsmere-Walberswick statutory designated sites

8.8.4 Ecological features falling within and supporting the Minsmere to Walberswick statutory designated sites feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) are valued from National to International importance.

8.8.5 The assessment set out in the following paragraphs of these ecological features is not altered by the scenarios or options outlined for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.6 No permanent or temporary direct loss of terrestrial, aquatic or intertidal habitats will occur as a result of construction, with trenchless techniques (including suitable buffers) for cabling to be employed at both locations where the Proposed Onshore Scheme crosses the designated sites, west and south of Walberswick respectively. Whilst a single construction access off the B1387 is located within the designated site, it will utilise an existing gap in a hedgerow for a farm track to provide access to the arable field beyond. Minor temporary loss of hedgerow and associated trees may be required to widen the gap and provide a bellmouth during construction, with the vegetation to be reinstated post-

construction. There are **unlikely to be significant effects** to the Minsmere-Walberswick statutory designated sites through habitat loss.

8.8.7 Embedded design measures for construction including trenchless cable installation techniques EM1 (introduction of trenchless techniques to avoid sensitive ecological features) would ensure the retention of habitat linkages that provide connectivity for qualifying species or assemblages of the designated sites. There are **unlikely to be significant effects** to the Minsmere-Walberswick statutory designated sites through fragmentation or severance of habitats.

Degradation of habitat through frac-out

8.8.8 The potential for habitat degradation from frac-out (an unplanned loss of drilling fluid to the surface) during construction has been considered for the designated sites that would be crossed with trenchless cable installation methods.

8.8.9 Implementation of the embedded design measure EM5 (design of trenchless methods to minimise the risk of frac-out) would ensure that frac-out incidents would be unlikely to occur within the Minsmere-Walberswick statutory designated sites. Nonetheless, frac-out cannot be ruled out at this stage of design, and the potential for impacts to result in a likely significant effect upon the designated sites is therefore considered below.

8.8.10 Drilling fluids involved in frac-out events are freshwater-based, inert bentonite (a clay rock) suspensions categorised as absolute non-hazardous waste in the European Waste Catalogue (Code 01 05 04, Ref 33) and which are considered to pose little or no risk to the environment (PLONOR, Ref 34). Above ground discharge of drilling fluid onto soil would not have toxic effects upon the habitats of the designated sites or the species they support.

8.8.11 There is potential for such frac-out incidents to result in habitat damage or degradation through the physical impacts of the deposition of clay. This could potentially smother and kill vegetative growth and the change the composition of the substrates upon which qualifying habitats depend. However, with the control measures in place, BD9 (minimise the risk of frac-out and clean up procedures), typically a frac-out is identified before it has travelled more than 2m from the fissure location and it is then contained within a small bund less than 3m x 3m in area, but in the worst case 5m x 5m (i.e. a maximum impacted area of 25 square metres). Control measure BD9 (minimise the risk of frac-out and clean up procedures) includes clean up protocols that would ensure that the impact would be temporary and that the impacted habitat would recover within a timeframe of a few weeks to one year, depending on the timing of spill in relation to the growth stage of the impacted vegetation.

8.8.12 In the unlikely worst-case that a frac-out event occurred within the qualifying habitats for the designated sites, control measure BD9 (minimise the risk of frac-out and clean up procedures) would ensure that impacts would be at a very small spatial scale and of a temporary nature. As such, there are **unlikely to be**

significant effects for the Minsmere-Walberswick statutory designated sites through habitat degradation related to frac out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.13 APIS (Ref 28) provides empirical critical loads (CL) for nitrogen deposition for the qualifying habitats:

a. European dry heaths;
b. perennial vegetation of stony banks; and
c. coastal lagoons (with annual vegetation of drift lines noted as being 'not sensitive').

8.8.14 The minimum CL provided for the most sensitive habitat is 5 kilograms of nitrogen per hectare per year (kgN/ha/yr). The most recent site-specific nitrogen deposition levels exceed the CL for the most sensitive habitat by approximately 8 kgN/ha/yr. Local contributions are largely attributed to livestock with 4.5% of the total contributions across the site attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts, unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.15 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to Minsmere-Walberswick designated sites through habitat degradation as a result of nitrogen deposition.

8.8.16 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** to Minsmere-Walberswick statutory designated sites from degradation of habitats through changes in air quality.

8.8.17 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Minsmere-Walberswick statutory designated sites from degradation of habitats through changes in water quality or quantity.

Direct mortality/injury

8.8.18 There will be no loss of habitat within the Minsmere-Walberswick designated sites during construction and the risk of degradation through frac-out is at a very small spatial scale. The land within the DOL is not considered to comprise FLL or

supporting habitat for relevant species of these designated sites and as such, no risk of protected or notable species direct mortality is identified. There is **unlikely to be a significant effect** for the Minsmere-Walberswick statutory designated sites through direct mortality of protected or notable species.

Disturbance

8.8.19 There is the potential for disturbance of the breeding and non-breeding ornithological interest of the designated sites as a result of temporary noise and visual impacts from construction, including qualifying species and assemblages, which have been identified in association with the sites and supporting habitats.

Landfall Site

8.8.20 Construction of the proposed Landfall would take up to 18 months, and temporal avoidance of the key activity periods for breeding and wintering birds would not therefore be possible.

8.8.21 The design includes a buffer from the designated sites at the proposed Landfall Site of approximately 100m. As a result, it is likely that only areas of reedbed habitat to north of Dunwich River would be subject to noise disturbance levels above 55dB (taken as a 'low noise threshold' below which a flight response is unlikely (Ref 35). These habitats have minimal use by qualifying bird species, which is likely due to existing levels of disturbance within and adjacent to the closest areas of the designated sites to the proposed Landfall Site, as recorded from baseline surveys.

8.8.22 The closest habitats to the proposed Landfall Site comprise reedbeds at Lampland Marshes, Town Salts, Oldtown Marshes and Corporation Marshes, which are crossed by footpaths with high levels of existing public disturbance. The proposed Landfall Site itself is an intensively farmed arable field subject to existing agricultural disturbance including operation of large machinery.

8.8.23 Additionally, survey data highlighted the occurrence of qualifying species generally at greater distances than the published disturbance distance for each respective species from human disturbance. These designating species include nesting attempts of bittern, marsh harrier and gadwall. Whilst some areas would have visibility of construction works, these are sufficiently distant from the areas used by features and/or not breaching the skyline such that **no significant effects** are anticipated (Ref 36).

Underground HVDC Cable

8.8.24 Construction activities to facilitate the proposed Underground HVDC Cable would include trenched and trenchless cable installation, accesses, installation of construction compounds and temporary haul routes which are likely to result in noise levels above 55dB along the proposed Underground Cable Corridor, in proximity to the designated sites and potential FLL. As previously noted, the majority of the bird interest is focussed upon habitats at a distance from the areas required for these activities, including the farm reservoir at approximately

300m from the DOL. There are some records of wintering waders, for example curlew and lapwing, within arable land west of Sallow Walk Covert, within the DOL. Existing levels of disturbance associated with the B1387 and recreational disturbance to the north of the DOL within the closest areas of Walberswick Common are likely to explain the minimal use of these habitats by qualifying or relevant assemblage bird species, as recorded from baseline surveys, which is also anticipated for the habitats adjacent to the B1125 Dunwich Road.

8.8.25 Control measures will be implemented to reduce the likelihood and magnitude of potential disturbance impacts to breeding and wintering birds through the control measures for noise, light, vibration (BD6: lighting restrictions to minimise disturbance to fauna and BD8: pollution prevention measures and sustainable construction drainage design). Compliance with legislation control measure BD9 (minimise the risk of frac-out and clean up procedures) additionally affords Schedule 1 species protection from disturbance when breeding, under the Wildlife and Countryside Act 1981. A number of breeding species of the designated sites in this feature are listed on Schedule 1.

8.8.26 With the implementation of these control measures, where required, there is **unlikely to be a significant effect** for the breeding and non-breeding ornithological interest of the Minsmere-Walberswick statutory designated sites through disturbance.

Marine statutory designated sites

8.8.27 The qualifying features of the marine statutory designated sites feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) are valued at International importance.

8.8.28 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.29 No permanent or temporary direct loss of aquatic or intertidal habitats will occur as a result of construction of the Proposed Onshore Scheme. Trenchless techniques for cabling will be employed where the Proposed Onshore Scheme crosses the intertidal habitats of the SPA from offshore to onshore, south of Walberswick. There are **unlikely to be significant effects** for the marine statutory designated sites through habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.30 The intertidal habitats of the SPA will be crossed using trenchless methods. As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths to minimise

the risk of frac out, with BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of frac-out. As such, there is **unlikely to be significant effects** for the marine statutory designated sites through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.31 APIS (Ref 28) provides available empirical CL for terrestrial habitats upon which the qualifying bird species rely:

a. coastal dune grasslands (grey dunes); and
b. shifting coastal dunes.

8.8.32 The minimum CL provided for the most sensitive habitat is 5 kgN/ha/yr. The most recent site-specific nitrogen deposition levels exceed the CL for the most sensitive habitat by approximately 7 kgN/ha/yr. Local contributions are largely attributed to livestock with 8.3% of the total contributions across the site are all attributed to road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts, unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.33 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the marine designated sites through habitat degradation as a result of nitrogen deposition.

8.8.34 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the marine statutory designated sites from degradation of habitats through changes in air quality.

8.8.35 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Marine statutory designated sites from degradation of habitats through changes in water quality or quantity.

Direct mortality and injury

8.8.36 Embedded design measures including trenchless cable installation techniques EM1 (introduction of trenchless techniques to avoid sensitive ecological features) would ensure that construction works would not directly impact habitats within the designated sites in such a way that would carry risk of direct mortality for relevant species of these designated sites. There are **unlikely to be significant**

effects for the marine statutory designated sites through direct mortality or injury of qualifying protected or notable species.

Disturbance

8.8.37 The potential for temporary noise and visual disturbance from construction upon the qualifying breeding and non-breeding ornithological interest of the designated sites has been considered. It is not anticipated that construction activities such as the trenchless cable installation south of Walberswick would result in noise levels above 55dB within the intertidal habitats. Furthermore, no qualifying bird species have been recorded as using onshore habitats, with the baseline surveys identifying small numbers offshore, in flight and on the water.

8.8.38 Furthermore, control measures will be implemented to reduce the likelihood and magnitude of potential disturbance impacts through the control of noise, light, vibration BD6 (lighting restrictions to minimise disturbance to fauna) and BD8 (pollution prevention measures and sustainable construction drainage design).

8.8.39 It is considered that the implementation of control measures, where required, to avoid and minimise disturbance impacts to the breeding and wintering bird species of the marine statutory designated sites will sufficiently mitigate impacts. There is **unlikely to be significant effects** through disturbance during construction to these species.

Pakefield, Benacre and Easton Bavents statutory designated sites

8.8.40 Ecological features falling within and supporting the Pakefield, Benacre and Easton Bavents statutory designated sites feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) are valued from National to International importance.

8.8.41 The assessment set out in the following paragraphs of these ecological features is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.42 The designated sites included within this ecological feature grouping are located in excess of 3km from the DOL. The land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat for relevant protected or notable species. As such, no impacts are anticipated and there are **unlikely to be significant effects** for the Pakefield, Benacre and Easton Bavents statutory designated sites through permanent or temporary habitat loss.

8.8.43 The Proposed Onshore Scheme does not bisect the designated sites included within this ecological feature grouping. As such, no impacts to the Pakefield, Benacre and Easton Bavents statutory designated sites through fragmentation or severance of habitat are identified and there are **unlikely to be significant effects**.

Degradation of habitat through frac-out

8.8.44 The designated sites included within this ecological feature grouping will not be crossed through trenchless methods and as such no potential for impact to the Pakefield, Benacre and Easton Bavents statutory designated sites through degradation of habitat resulting from frac-out is identified and there are **unlikely to be significant effects**.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.45 The designated sites included within this ecological feature grouping are located in excess of 200m of the DOL and scoped out of requirement for a construction phase air quality assessment. As such, there are **unlikely to be significant effects** for the Pakefield, Benacre and Easton Bavents statutory designated sites through changes in air quality.

8.8.46 The ecological feature grouping is over 3km from the DOL and no hydrological linkage between the features and the construction area is identified. As such, no impacts are anticipated and there are **unlikely to be significant effects** for the Pakefield, Benacre and Easton Bavents statutory designated sites through degradation of habitats through changes in water quality or quantity.

Direct mortality, injury or disturbance of protected or notable species

8.8.47 Given the distance of this ecological feature grouping from the DOL and that the land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat, no impacts through direct mortality, injury or disturbance to protected or notable species of the Pakefield, Benacre and Easton Bavents statutory designated sites are identified and there are **unlikely to be significant effects**.

Alde-Ore statutory designated sites

8.8.48 Ecological features falling within and supporting the Alde-Ore statutory designated sites feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) are valued at National importance.

8.8.49 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.50 The designated sites included within this ecological feature grouping are located over 2km from the Amendment to Kiln Lane Substation Scenario DOL and over 1km from the Full Build out of Kiln Lane Scenario DOL. The land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat for relevant protected or notable species. As such, no impacts are anticipated and

there are **unlikely to be significant effects** for the Alde-Ore statutory designated sites through permanent or temporary habitat loss.

8.8.51 The Proposed Onshore Scheme does not bisect the designated sites included within this ecological feature grouping. As such, no impacts to the Alde-Ore designated sites through fragmentation or severance of habitat are identified and there are **unlikely to be significant effects**.

Degradation of habitat through frac-out

8.8.52 The designated sites included within this ecological feature grouping will not be crossed through trenchless methods and as such no potential for impact to the Alde-Ore statutory designated sites through degradation of habitat from frac-out are identified and there are **unlikely to be significant effects**.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.53 The designated sites included within this ecological feature grouping are located in excess of 200m of the DOL and scoped out of requirement for a construction phase air quality assessment. As such, there are **unlikely to be significant effects** for the Alde-Ore statutory designated sites through changes in air quality.

8.8.54 The ecological feature grouping is over 3km from the DOL, but there is hydrological connectivity to construction areas through the River Fromus catchment, which flows into the Alde-Ore estuary. However, potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design), with impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Alde-Ore statutory designated sites from degradation of habitats through changes in water quality or quantity.

Direct mortality, injury or disturbance of protected or notable species

8.8.55 Given the distance of this ecological feature grouping from the DOL and that the land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat, no impacts from direct mortality, injury or disturbance to protected or notable species of the Alde-Ore statutory designated sites are identified and there are **unlikely to be significant effects**.

Statutory designated sites east and south of Friston

8.8.56 Ecological features falling within and supporting the statutory designated sites east and south of Friston feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) are valued from National to International importance.

8.8.57 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.58 The designated sites included within this ecological feature grouping are located over 2km from the Amendment to Kiln Lane Substation Scenario DOL and over 1km from the Full Build Out of Kiln Lane Substation Scenario DOL and the land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat for relevant protected or notable species. As such, no impacts are anticipated and there are **unlikely to be significant effects** for the statutory designated sites east and south of Friston through permanent or temporary habitat loss.

8.8.59 The Proposed Onshore Scheme does not bisect the designated sites included within this ecological feature grouping. As such, no impacts are anticipated and there are **unlikely to be significant effects** for the statutory designated sites east and south of Friston through fragmentation or severance of habitat.

Degradation of habitat through frac-out

8.8.60 The designated sites included within this ecological feature grouping will not be crossed through trenchless methods and as such no potential for impact to the statutory designated sites east and south of Friston through degradation of habitat resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.61 The designated sites included within this ecological feature grouping are located in excess of 200m of the DOL and scoped out of requirement for a construction phase air quality assessment. As such, there are **unlikely to be significant effects** for the statutory designated sites east and south of Friston through changes in air quality.

8.8.62 The ecological feature grouping is over 2km from the Amendment to Kiln Lane Substation Scenario DOL and over 1km from the Full Build Out of Kiln Lane Substation Scenario DOL, but there is hydrological connectivity to construction areas through the Hundred River catchment. However, potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design), with impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for statutory designated sites east and south of Friston from degradation of habitats through changes in water quality or quantity.

Direct mortality, injury or disturbance of protected or notable species

8.8.63 Given the distance of this ecological feature grouping from the DOL and that the land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat, no impacts from direct mortality, injury or disturbance to protected or notable species of the statutory designated sites east and south of Friston are identified and there are **unlikely to be significant effects**.

Other statutory designated sites

8.8.64 Ecological features falling within and supporting the other statutory designated sites ecological feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) are valued from National to International sensitivity.

8.8.65 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.66 The closest designated sites included within this ecological feature grouping are located over 1.5km from the DOL and the land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat for relevant protected or notable species. As such, no impacts are anticipated and there are **unlikely to be significant effects** for the other statutory designated sites through permanent or temporary habitat loss.

8.8.67 The Proposed Onshore Scheme does not bisect the designated sites included within this ecological feature grouping. As such, no impacts to the other statutory designated sites through fragmentation or severance of habitat are identified and there are **unlikely to be significant effects**.

Degradation of habitat through frac-out

8.8.68 The designated sites included within this ecological feature grouping will not be crossed through trenchless methods and as such no potential for impact to the other statutory designated sites through degradation of habitat resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.69 The designated sites included within this ecological feature grouping are located in excess of 200m of the DOL and scoped out of requirement for a construction phase air quality assessment. As such, there are **unlikely to be significant effects** for the other statutory designated sites through changes in air quality.

8.8.70 The ecological feature grouping is over 1.5km from the DOL with limited hydrological linkage between the features and the construction area is identified. As such, no impacts are anticipated and there are **unlikely to be significant**

effects for the other statutory designated sites through changes in water quality or quantity.

Direct mortality, injury or disturbance of protected or notable species

8.8.71 Given the distance of this ecological feature grouping from the DOL and that the land within or adjacent to the DOL is not considered to comprise FLL or supporting habitat, no impacts from direct mortality, injury or disturbance to protected or notable species of the other statutory designated sites are identified and there are **unlikely to be significant effects**

Knodishall Common County Wildlife Site

8.8.72 Knodishall Common CWS as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County importance. The assessment is not altered by the scenarios for the Proposed Onshore Scheme, except for potential impacts of degradation of habitat through changes in water quality. No part of the assessment of this feature is altered by the options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.73 The CWS is located approximately 250m from the Full Build Out of Kiln Lane Substation Scenario DOL and over 1.3km from the Amendment to Kiln Lane Substation Scenario DOL. Given these distances from the Proposed Onshore Scheme, no impact to Knodishall Common CWS from permanent or temporary habitat loss is identified and there are **unlikely to be significant effects**.

8.8.74 The Proposed Onshore Scheme does not bisect the CWS. As such, no impacts to Knodishall Common CWS through fragmentation or severance of habitat are identified and there are **unlikely to be significant effects**.

Degradation of habitat through frac-out

8.8.75 Knodishall Common CWS will not be crossed through trenchless methods and as such no potential for impact through degradation of habitat resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.76 The CWS is located in excess of 200m from the DOL and has been scoped out of requirement for a construction phase air quality assessment, in accordance with the methodology presented in **Appendix 7.1 Air Quality Assessment Methodology**. As such, there are **unlikely to be significant effects** for Knodishall Common CWS through changes in air quality as a result of nitrogen deposition and given the distance, no potential for dust deposition is identified.

8.8.77 No hydrological connection exists between the CWS and the Amendment to Kiln Lane Substation Scenario DOL, as a result no impacts are predicted. The CWS is hydrologically connected to the Full Build Out of Kiln Lane Substation Scenario DOL, through the Hundred River (where localised works to overhead lines would be required at Coldfair Green). Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Knodishall Common CWS from degradation of habitats through changes in water quality or quantity.

Direct mortality, injury or disturbance

8.8.78 Under the Full Build out of Kiln Lane Scenario, the works to overhead power lines are limited to minor realignments of existing lines. They are therefore not considered to result in a significantly different from baseline collision risk to birds associated with Knodishall Common CWS.

8.8.79 Therefore, given the distance of the CWS from the Proposed Onshore Scheme and the nature and scale of the closest construction works, no impacts from direct mortality, injury or disturbance are anticipated. There are **unlikely to be significant effects** for Knodishall Common CWS through direct mortality, injury or disturbance of protected or notable species associated with the site.

Grove Wood County Wildlife Site and Ancient Woodland Inventory site

8.8.80 Grove Wood CWS and AWI site as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County to National importance. The assessment of this feature is altered by the scenarios for the Proposed Onshore Scheme, but not the options, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.81 Grove Wood CWS and AWI site is located adjacent to the Full Build Out of Kiln Lane Substation Scenario DOL and approximately 300m from the Amendment to Kiln Lane Substation Scenario DOL.

8.8.82 No impacts are identified for the Amendment to Kiln Lane Substation Scenario. For the Full Build Out of Kiln Lane Substation Scenario, as control measure BD2 (protection of valuable features during trenchless techniques) will ensure that suitable minimum buffers from Grove Wood CWS and AWI site are maintained throughout construction, such that habitat loss or fragmentation is avoided. As such, there are **unlikely to be significant effects** for Grove Wood CWS through permanent or temporary habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.83 Grove Wood CWS and AWI site will not be crossed through trenchless methods on either the Full Build Out of Kiln Lane Substation Scenario or the Amendment to Kiln Lane Substation Scenario. As such no potential for impact to Grove Wood CWS and AWI site through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.84 Relevant to both Kiln Lane Substation scenarios, APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceeds the CL by approximately 15 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.3% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts, unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.85 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to Grove Wood CWS through habitat degradation as a result of nitrogen deposition.

8.8.86 No impacts with regard to dust deposition are anticipated for the Amendment to Kiln Lane Substation Scenario, due to the distance from Grove Wood CWS. For the Full Build Out of Kiln Lane Substation Scenario potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the Grove Wood CWS from degradation of habitats through changes in air quality.

8.8.87 No impacts with regard to pollution events or sediment run-off are anticipated for the Amendment to Kiln Lane Substation Scenario, due to the distance from Grove Wood CWS. For the Full Build Out of Kiln Lane Substation Scenario potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Grove Wood CWS and AWI site from degradation of habitats through changes in water quality or quantity.

Direct mortality, injury and disturbance

8.8.88 The citation for Grove Wood CWS does not reference protected or notable species associated with the CWS, therefore direct mortality, injury and

disturbance are not assessed within this section but are covered under the assessment of impacts to specific protected or notable species features where relevant.

Benhall Green Meadows County Wildlife Site

8.8.89 Benhall Green Meadows CWS as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss or fragmentation

8.8.90 Benhall Green Meadows CWS is 60m from the DOL and therefore no impact to the CWS from permanent or temporary habitat loss is identified and there are **unlikely to be significant effects**.

8.8.91 The Proposed Onshore Scheme does not bisect Benhall Green Meadows CWS. As such, no impacts to the CWS through fragmentation or severance of habitat are identified and there are **unlikely to be significant effects**.

Degradation of habitat through frac-out

8.8.92 Benhall Green Meadows CWS will not be crossed through trenchless methods and as such no potential for impact to the CWS through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.93 APIS (Ref 28) provides available empirical CL for neutral grassland (lowland) with a minimum CL of 20 kgN/ha/yr. The existing nitrogen deposition levels do not exceed the CL. Local contributions are largely attributed to livestock with 7.9% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.94 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the Benhall Green Meadows CWS from degradation of habitats through changes in air quality.

8.8.95 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial

ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Benhall Green Meadows CWS from degradation of habitats through changes in water quality or quantity.

Direct mortality, injury and disturbance

8.8.96 The citation for the Benhall Green Meadows CWS does not reference protected or notable species associated with the CWS, therefore direct mortality, injury and disturbance are not assessed within this section but are covered under the assessment of impacts to protected or notable species features.

County Wildlife Sites and ancient woodland at Theberton

8.8.97 This ecological feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County to National importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.98 The closest site within this feature grouping is Leiston Airfield CWS 12m from the DOL, all ancient woodland or potential ancient woodland areas are at least 15m from the DOL. The control measure BD2 (protection of valuable features during trenchless techniques) will ensure that suitable minimum buffers from all sites within the grouping are maintained throughout construction, such that habitat loss or fragmentation is avoided. As such, there are **unlikely to be significant effects** for the CWSs and ancient woodland at Theberton through permanent or temporary habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.99 The ecological features within this grouping will not be crossed through trenchless methods and as such no potential for impact to the CWSs and ancient woodland at Theberton through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.100 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 15 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.4% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.101 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the woodlands at Theberton through habitat degradation as a result of nitrogen deposition.

8.8.102 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the CWSs and ancient woodland at Theberton from degradation of habitats through changes in air quality.

8.8.103 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for CWSs and ancient woodland at Theberton from degradation of habitats through changes in water quality or quantity.

Direct mortality or injury

8.8.104 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), and the control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD5 (measures to exclude or protect fauna) will ensure that protected and notable species associated with the CWSs and ancient woodland at Theberton are not directly impacted from proposed working practices. As such, there are **unlikely to be significant effects** for the CWSs and ancient woodland from direct mortality or injury of associated protected and notable species.

Disturbance

8.8.105 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), and the control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species

legislation and licensing), BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to protected and notable species associated with the CWSs and ancient woodland at Theberton is avoided or reduced. As such, there are **unlikely to be significant effects** for the CWSs and ancient woodland from disturbance of associated protected and notable species.

County Wildlife Sites of Minsmere Valley

8.8.106 This ecological feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County to National importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.107 This feature grouping includes Darsham Marshes CWS and Minsmere Valley Reckford Bridge to Beveriche Manor CWS (forming part of the CWSs of Minsmere Valley) which is partially within the DOL.

8.8.108 No permanent or temporary direct loss of terrestrial or riparian habitat will occur as a result of construction, with trenchless techniques (including suitable buffers) for cabling to be employed at this location where the Proposed Onshore Scheme crosses the CWSs of Minsmere Valley. There are **unlikely to be significant effects** for the CWSs of Minsmere Valley through habitat loss.

8.8.109 Embedded design measures including trenchless cable installation techniques (EM1 (introduction of trenchless techniques to avoid sensitive ecological features)) would ensure that construction works would not remove habitat linkages that provide connectivity for species associated with the CWSs of Minsmere Valley. These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for the CWSs of Minsmere Valley through fragmentation or severance of habitats.

Degradation of habitat through frac-out

8.8.110 Darsham Marshes CWS and Minsmere Valley Reckford Bridge to Beveriche Manor CWS will be crossed through trenchless techniques. As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures) (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of frac-out. As such, there are **unlikely to be significant effects** for the CWSs of Minsmere Valley through degradation of habitat resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.111 APIS (Ref 28) provides available empirical CL for fen, marsh and swamp with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 4 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.4% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.112 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the CWS of Minsmere Valley through habitat degradation as a result of nitrogen deposition.

8.8.113 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the CWSs of Minsmere Valley from degradation of habitats through changes in air quality.

8.8.114 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for CWSs of Minsmere Valley from degradation of habitats through changes in water quality or quantity.

Direct mortality or injury

8.8.115 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD5 (measures to exclude or protect fauna) will ensure that protected and notable species associated with the CWS of Minsmere Valley are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for the CWSs of Minsmere Valley from direct mortality or injury of associated protected and notable species.

Disturbance

8.8.116 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to the protected and notable species associated with the CWS of Minsmere Valley, is avoided or reduced. All relevant protected species legislation will be complied with as per control measure BD14 (compliance with protected species legislation and licensing). This includes avoidance of disturbance of Schedule 1 species of the Wildlife and Countryside Act 1981 including breeding kingfisher and Cetti's warbler. As such, there are **unlikely to be significant effects** for the CWSs of Minsmere Valley from disturbance of associated protected and notable species.

The Wilderness (Darsham) County Wildlife Site

8.8.117 This ecological feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.118 Wilderness (Darsham) CWS is 15m from the DOL. Control measure BD2 (protection of valuable features during trenchless techniques) will ensure that suitable minimum buffers from the CWS is maintained throughout construction, such that habitat loss or fragmentation is avoided. As such, there are **unlikely to be significant effects** for the CWS through permanent or temporary habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.119 Wilderness (Darsham) CWS will not be crossed through trenchless methods and as such there are **unlikely to be significant effects** on the CWS through degradation of habitats resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.120 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by

approximately 5 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.4% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.121 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to Wilderness (Darsham) CWS through habitat degradation as a result of nitrogen deposition.

8.8.122 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the CWS from degradation of habitats through changes in air quality.

8.8.123 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for the Wilderness (Darsham) CWS from degradation of habitats through changes in water quality or quantity.

Direct mortality or injury

8.8.124 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features), and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD5 (measures to exclude or protect fauna), BD15 (reptile translocation) will ensure that protected and notable species associated with the CWS are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for the Wilderness (Darsham) CWS from direct mortality or injury of associated protected and notable species.

Disturbance

8.8.125 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable

features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to the protected and notable species associated with the CWS is avoided or reduced. As such, there are **unlikely to be significant effects** for the Wilderness (Darsham) CWS from disturbance of associated protected and notable species.

County Wildlife Sites and ancient woodland at Hinton

8.8.126 This ecological feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County to National importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.127 The CWSs and ancient woodland at Hinton is 20m from the DOL. The embedded mitigation measure BD2 (protection of valuable features during trenchless techniques) will ensure that suitable minimum buffers from all features within the grouping are maintained throughout construction, such that habitat loss or fragmentation is avoided. As such, there are **unlikely to be significant effects** for the CWSs and ancient woodland at Hinton through permanent or temporary habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.128 CWSs and ancient woodland at Hinton will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.129 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 5 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.4% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.130 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors

described above, is that there are **unlikely to be significant effects** to the CWSs and ancient woodland at Hinton through habitat degradation as a result of nitrogen deposition.

8.8.131 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the CWSs and ancient woodland at Hinton from degradation of habitats through changes in air quality.

8.8.132 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for CWSs and ancient woodland at Hinton from degradation of habitats through changes in water quality or quantity.

Direct mortality or injury

8.8.133 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD5 (measures to exclude or protect fauna) will ensure that protected and notable species associated with the CWSs and ancient woodland at Hinton are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for the CWSs and ancient woodland at Hinton from direct mortality or injury of associated protected and notable species.

Disturbance

8.8.134 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to the protected and notable species associated with the CWSs and ancient woodland at Hinton, is avoided or reduced. As such, there are

unlikely to be significant effects for the CWSs and ancient woodland at Hinton from disturbance of associated protected and notable species.

Walberswick Saltmarsh County Wildlife Site

8.8.135 The Walberswick Saltmarsh CWS as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County to National importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.136 Walberswick Saltmarsh CWS is 114m from the DOL. The control measure BD2 (protection of valuable features during trenchless techniques) will ensure that suitable minimum buffers from the CWS is maintained throughout construction, such that habitat loss or fragmentation is avoided. As such, there are **unlikely to be significant effects** for Walberswick Saltmarsh CWS through permanent or temporary habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.137 Walberswick Saltmarsh CWS will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.138 APIS (Ref 28) provides available empirical CL for coastal saltmarsh with a minimum CL of 20 kgN/ha/yr. The existing nitrogen deposition levels for the closest inland locations (not available for this specific location) are not exceeded. Local contributions are largely attributed to livestock with 4.7% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.139 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to Walberswick Saltmarsh CWS through habitat degradation as a result of nitrogen deposition.

8.8.140 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for Walberswick Saltmarsh CWS from degradation of habitats through changes in air quality.

8.8.141 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Walberswick Saltmarsh CWS from degradation of habitats through changes in water quality or quantity.

Direct mortality or injury

8.8.142 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features), and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD5 (measures to exclude or protect fauna) will ensure that protected and notable species associated with the CWS are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for Walberswick Saltmarsh CWS from direct mortality or injury of associated protected and notable species.

Disturbance

8.8.143 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to the protected and notable species associated with the CWS, is avoided or reduced. As such, there are **unlikely to be significant effects** for the Walberswick Saltmarsh CWS from disturbance of associated protected and notable species.

Other non-statutory designated sites

8.8.144 This ecological feature grouping as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.1 Baseline Report – Designated Sites**) is valued at County importance and the assessment is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.145 The closest CWS within this feature grouping is Knodishall Whin CWS, this is located approximately 543m from the DOL. Given these distances from the Proposed Onshore Scheme, no impact to other non-statutory designated sites from permanent or temporary habitat loss is identified and there are **unlikely to be significant effects**.

Degradation of habitat through frac-out

8.8.146 The other non-statutory designated sites will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.147 The other non-statutory designated sites included within this ecological feature grouping are located in excess of 200m of the DOL and scoped out of requirement for a construction phase air quality assessment. As such, there are **unlikely to be significant effects** for the other non-statutory designated sites through changes in air quality.

8.8.148 The other non-statutory designated sites included within this ecological feature have limited hydrologically connectivity to areas within the DOL. As such, no impacts are anticipated and there are **unlikely to be significant effects** for the other non-statutory designated sites through changes in water quality or quantity.

Direct mortality and injury

8.8.149 Given the distance of the other non-statutory designated sites from the Proposed Onshore Scheme and the nature and scale of the closest construction works, no impacts from direct mortality and injury are anticipated and there are **unlikely to be significant effects**.

Disturbance

8.8.150 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to the protected and notable species associated with the other non-statutory designated sites is avoided or reduced. As such, there are **unlikely to be significant effects** for the other non-statutory designated sites from disturbance of associated protected and notable species.

Hundred River at Coldfair Green

8.8.151 The section of the Hundred River as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) associated with the Proposed Onshore Scheme has been valued at Local importance.

8.8.152 The assessment of the ecological feature is only relevant under the Full Build Out of Kiln Lane Substation Scenario outlined for the Proposed Onshore Scheme. The assessment of the ecological feature is not altered by the options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.153 Works relevant to the section of the Hundred River associated with the Proposed Onshore Scheme are limited to modifications to an existing overhead line pylon, including an access off School Road, west of Coldfair Green. No permanent or temporary loss of the Hundred River or its immediate riparian zone is anticipated.

8.8.154 To avoid impacts to retained ecological features, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measure BD2 (protection of valuable features during trenchless techniques).

8.8.155 As such, there are **unlikely to be significant effects** for the Hundred River from permanent or temporary loss of terrestrial, aquatic or intertidal habitats.

Degradation of habitat through frac-out

8.8.156 The Hundred River will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.157 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the Hundred River from degradation of habitats through changes in air quality.

8.8.158 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Hundred River from degradation of habitats through changes in water quality or quantity.

Lowland meadow north of the B1119

8.8.159 Lowland meadow habitat north of the B1119 as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) has been valued at County importance.

8.8.160 The assessment of the ecological feature is not altered by the scenarios outlined for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios are taken forward. Assessment of the ecological feature is affected by the options relating to the proposed Underground HVAC Cable Corridor.

Habitat loss and fragmentation

8.8.161 No direct habitat loss of lowland meadow will occur as a result of construction, with trenchless methods (including suitable buffers which will be confirmed in the subsequent ES) for cabling to be employed under the Northern Route option for the proposed Underground HVAC Cable Corridor, and avoidance of this habitat under the Southern Route option for the proposed Underground HVAC Cable Corridor. As such, there are **unlikely to be significant effects** for lowland meadow north of the B1119 from permanent or temporary loss or fragmentation of terrestrial habitats.

Degradation of habitat through frac-out

8.8.162 Lowland meadow north of B1119 will be subject to trenchless methods under the Northern Route option. As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of a frac-out. As such, there is **unlikely to be significant effect** for the lowland meadow north of B1119 through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.163 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the lowland meadow north of B1119 from degradation of habitats through changes in air quality.

8.8.164 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for lowland meadow north

of B1119 from degradation of habitats through changes in water quality or quantity.

Habitats within and surrounding Harris' Belt and Pit

8.8.165 Ecological features at habitats within and surrounding Harris' Belt and Pit as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) are valued from Local to National importance.

8.8.166 The assessment of the ecological feature is not altered by the scenarios for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios are taken forward. Assessment of the ecological feature is affected by the options relating to the proposed Underground HVAC Cable Corridor.

Habitat loss and fragmentation

8.8.167 Under the Northern Route option for the proposed Underground HVAC Cable Corridor, only the ecologically valuable line of trees, including an ancient oak tree, fall within the LoD. Loss or deterioration of the ancient tree would be avoided, either through micro-siting of the proposed Underground Cable, use of trenchless techniques or the use of tree-specific protective measures to be outlined within the Arboricultural Impact Assessment. Whilst it is envisaged that the rest of the ecologically valuable line of trees would also be retained, in the worst-case scenario, a portion of the feature could be lost. The loss of mature trees would have a permanent impact to the structure and function of the habitats within and surrounding Harris' Belt and Pit that would result in a significant effect at a Local scale, which is a **Minor adverse effect**.

8.8.168 Under the Southern Route option for the proposed Underground HVAC Cable Corridor, the plantation woodlands and a single mature oak would be crossed by the proposed Underground HVAC Cable in the scenario where the Applicant would also install ducting for Sea Link's cables, with the construction corridor being up to 94m width. As the trench would be open-cut, this would result in the loss of up to 94m of the plantations, and potentially one mature oak, though efforts would be made to avoid the tree through micro-siting, following detailed arboricultural survey and advice. Under habitat reinstatement measures BD2 (protection of valuable features during trenchless techniques) and BD21 (planting of compensatory trees) woodland planting will be reinstated in the area surrounding the proposed Converter Station and the loss of plantation woodland is therefore temporary. The potential loss of the mature oak tree is considered to be permanent given the timeframe required for such a feature to establish. These habitat losses would not result in a material impact to the structure and function of habitats within and surrounding Harris' Belt and Pit and there are **unlikely to be significant effects** from habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.169 Habitats within and surrounding Harris's Belt and Pit will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.170 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland (used as a proxy for veteran trees) with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 16 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.29% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.171 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the veteran and ancient trees within and surrounding Harris's Belt and Pit through habitat degradation as a result of nitrogen deposition.

8.8.172 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the habitats within and surrounding Harris's Belt and Pit from degradation of habitats through changes in air quality.

8.8.173 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for habitats within and surrounding Harris's Belt and Pit from degradation of habitats through changes in water quality or quantity.

River Fromus and associated habitats

8.8.174 Ecological features at River Fromus and associated habitats as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) are valued from Local to National importance.

8.8.175 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the

works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.176 The clear span bridge across the River Fromus would have a height of up to either 6m or 4m (from the ground level at the abutment to the top of the parapet) and 62m long approach ramps (for the 6m option) or 42m long approach ramps (for the 4m option). With either bridge design option, the bridge abutments would be set back 8m from the bank top, and therefore no loss of emergent riparian vegetation is anticipated.

8.8.177 For the 6m (from the ground level at the abutment to the top of the parapet) height bridge over the River Fromus, approximately 0.2ha of neutral grassland containing orchids would be lost due to the construction footprint of the bridge and access ramps and the permanent access track either side. For the 4m high bridge this would reduce to approximately 0.15ha. Additionally, an approximate 0.2ha area of plantation and 0.14ha of HPI woodland would be lost. The loss of HPI woodland is considered to be permanent given the timeframe required for such a feature to establish.

8.8.178 Approximately 26m of a wet ditch with marginal and aquatic vegetation west of the River Fromus would be temporarily lost due to a culvert to be installed for a haul road and two temporary outfalls into ditches to discharge surface runoff from the haul road/construction sites.

8.8.179 The HPI woodland loss would have a permanent impact to the structure and function of the River Fromus and associated habitats that would result in a **Moderate adverse** effect, which is **significant** at the County scale.

Degradation of habitat through frac-out

8.8.180 The River Fromus and associated habitats will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.181 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland (used as a proxy for veteran trees) with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 17 kgN/ha/yr. Local contributions are largely attributed to livestock with 7.89% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.182 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken

to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the veteran and ancient trees associated with the River Fromus through habitat degradation as a result of nitrogen deposition.

8.8.183 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the River Fromus and associated habitats from degradation of habitats through changes in air quality.

8.8.184 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for the River Fromus and associated habitats from degradation of habitats through changes in water quality or quantity.

Habitats between Moat Road and Pretty Road

8.8.185 Habitats between Moat Road and Pretty Road as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) are valued from Local to County importance.

8.8.186 The assessment of the ecological feature is not altered by the scenarios for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios are taken forward. Assessment of the ecological feature is affected by the options relating to the proposed Underground HVDC Cable Corridor.

Habitat loss and fragmentation

8.8.187 Under the Western Route option for the proposed Underground HVDC Cable Corridor, habitat loss would constitute loss of cropland and modified grassland, scrub, as well as sections of two species-rich hedgerows, an ecologically valuable line of trees, and a non-ecologically valuable line of trees, with all other habitats subject to trenchless techniques. Whilst the haul route passes through linear HPI woodland along the southern edge of Pretty Road, this would utilise an existing farm track through the woodland and therefore works required to facilitate construction traffic are considered to be limited to canopy reductions of individual trees, guided by arboricultural advice following detailed arboricultural survey.

8.8.188 In the worst-case, construction works would result in the temporary loss of up to 46m of each linear feature. However, under control measure BD10 (reduced cable corridor working widths to avoid sensitive features) further design development is likely to reduce each loss to a working width up to 19.5m,

targeting gaps between mature trees. Additionally, loss of linear features at the bellmouths of accesses would be minimised where feasible, as per control measure BDXX. Consequently, under the Western Route Option, habitat losses would have a permanent impact to the structure and function of habitats between Moat Road and Pretty Road that would result in a **Minor adverse** effect, which is **significant** at up to a Local scale.

8.8.189 Under the Eastern Route option for the proposed Underground HVDC Cable Corridor, habitat loss would be limited to partial losses of one ecologically valuable and one other line of trees, as the majority of the cable installation will be within land already cleared for the Sizewell Link Road. Potential losses of mature trees within the ecologically valuable line of trees are considered to be permanent given the timeframe required for such a feature to establish. As such, under the Eastern Route Option, habitat losses would also have a permanent impact to the structure and function of habitats between Moat Road and Pretty Road that would result in a **Minor adverse** effect, which is **significant** at up to a Local scale.

Degradation of habitat through frac-out

8.8.190 Habitats will be crossed through trenchless methods. As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of frac-out. As such, there is **unlikely to be significant effect** for habitats between Moat Road and Pretty Road through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.191 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for habitats between Moat Road and Pretty Road from degradation of habitats through changes in air quality.

8.8.1 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for habitats between Moat Road and Pretty Road from degradation of habitats through changes in water quality or quantity.

Habitats between Pretty Road and Hawthorn Road

8.8.2 Habitats between Pretty Road and Hawthorn Road as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) are valued from Local to National importance.

8.8.3 The assessment of the ecological features is not altered by the scenarios for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios are taken forward. The assessment of the ecological feature is affected by the options relating to the proposed Underground HVDC Cable Corridor.

Habitat loss and fragmentation

8.8.4 Under the Western Route option for the proposed Underground HVDC Cable Corridor, the only habitat loss would constitute temporary loss of cropland, with all other habitats subject to trenchless techniques. Whilst a haul route passes through a hedgerow with mature trees along the northern edge of Pretty Road, this would utilise an existing farm track through the hedgerow and therefore proposed works required to facilitate construction traffic are considered to be limited to canopy reductions of individual trees, to be guided by arboricultural advice following detailed arboricultural survey.

8.8.5 Under the Eastern Route option for the proposed Underground HVDC Cable Corridor, no loss of habitats is anticipated, as the cable installation would be within land already cleared for the Sizewell Link Road.

8.8.6 As such, there are **unlikely to be significant effects** for habitats between Pretty Road and Hawthorn Road from permanent or temporary habitat loss or fragmentation under either the Western Route option or Eastern Route option for the proposed HVDC Underground Cable Corridor.

Degradation of habitat through frac-out

8.8.7 Habitats will be crossed through trenchless methods. As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of frac-out. As such, there are **unlikely to be significant effects** for habitats between Pretty Road and Hawthorn Road through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.8 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland (used as a proxy for veteran trees) with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 16kgN/ha/yr. Local contributions are largely attributed to livestock with 7.41% of the total contributions across the

location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.9 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the potential veteran trees between Pretty Road and Hawthorn Road through habitat degradation as a result of nitrogen deposition.

8.8.10 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the habitats between Pretty Road and Hawthorn Road from degradation of habitats through changes in air quality.

8.8.11 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for habitats between Pretty Road and Hawthorn Road from degradation of habitats through changes in water quality or quantity.

Plantation woodland east of Middleton Moor

8.8.12 The plantation woodland east of Middleton Moor as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) has been valued at Local importance.

8.8.13 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.14 In the worst-case, construction works would result in the loss of approximately 0.4ha of plantation woodland and associated orchid population from the construction corridor width of 46m for the proposed Underground HVDC Cable Corridor. However, under control measure BD10 (reduced cable corridor working widths to avoid sensitive features), further design development is likely to reduce to a working width to up to 19.5m at the sensitive crossing point. Whilst replanting of trees within the cable easement is not feasible, this area would be reinstated

as species-rich grassland and scrub to maintain ecological connectivity throughout this habitat corridor. As such, there are **unlikely to be significant effects** for plantation woodland east of Middleton Moor from habitat loss or fragmentation.

Degradation of habitat through frac-out

8.8.15 The plantation woodland east of Middleton Moor will not be crossed through trenchless methods and as such no potential for impact through degradation of habitats resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.16 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the plantation woodland east of Middleton Moor from degradation of habitats through changes in air quality.

8.8.17 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for the plantation woodland east of Middleton Moor from degradation of habitats through changes in water quality or quantity.

Habitats north of Hinton Road

8.8.18 Habitats north of Hinton Road as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) have been valued from Local to National importance.

8.8.19 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.20 No direct habitat loss of habitats north of Hinton Road will occur as a result of construction, with trenchless methods (including suitable buffers) for cabling to be employed. Consequently, there are **unlikely to be significant effects** for habitats north of Hinton Road from permanent or temporary loss or fragmentation of habitats.

Degradation of habitat through frac-out

8.8.21 Habitats will be crossed through trenchless methods. As outlined in control

measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of a frac-out. As such, there are **unlikely to be significant effects** for habitats north of Hinton Road through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.22 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland (used as a proxy for veteran trees) with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for this location exceed the CL for the most sensitive habitat by approximately 18kgN/ha/yr. Local contributions are largely attributed to livestock with 7.4% of the total contributions across the location attributed to all road transport. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.23 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the veteran trees north of Hinton Road through habitat degradation as a result of nitrogen deposition.

8.8.24 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the habitats north of Hinton Road from degradation of habitats through changes in air quality.

8.8.25 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Habitats north of Hinton Road from degradation of habitats through changes in water quality or quantity.

Minor watercourses

8.8.26 Minor watercourses as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) associated with the Proposed Onshore Scheme have been valued at Local importance.

8.8.27 The assessment of the ecological feature is not altered by the scenarios outlined for the Proposed Onshore Scheme, on the basis that the works within the vicinity

of the feature are the same irrespective of which scenarios are taken forward. Assessment of the ecological feature is affected by the options relating to the proposed Underground HVAC Cable Corridor.

Habitat loss and fragmentation

8.8.28 For both the Northern Route option and Southern Route option for the proposed Underground HVAC Cable Corridor, most minor watercourses would be either avoided through routing or crossed by trenchless techniques. However, the crossings of the inland section of the Dunwich River and the northern Hundred River tributary would require temporary bridges in order to facilitate haul road crossing of the watercourses. The bridge over the Hundred River tributary would utilise an existing farm crossing but may require additional works to ensure the suitability for construction traffic, whereas the crossing of the Dunwich River will require a new structure. These watercourses run dry for the majority of the year, and the bridges would be limited in scale with small extents of riparian channel loss to be temporarily lost. Furthermore, to avoid indirect impacts to retained adjacent areas of the ecological features, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques).

8.8.29 Under the Northern Route option for the proposed Underground HVAC Cable Corridor, the River Fromus tributary and riparian corridor would not be crossed by the proposed Underground HVAC Cable Corridor and therefore no impacts are anticipated through permanent or temporary loss or fragmentation of terrestrial or aquatic habitats and there are **unlikely to be significant effects**.

8.8.30 Under the Southern Route option for the proposed Underground HVAC Cable Corridor, the River Fromus tributary would be crossed by the proposed Underground HVAC Cable Corridor co-located with Sea Link, with the cable corridor up to 94m in width. As the trench would be open-cut, this would result in the temporary loss of up to 94m of the tributary, though as per control measure BD10 (reduced cable corridor working widths to avoid sensitive features), this working width would likely be reduced to 52m at the sensitive crossing point. As the work is temporary, the watercourse would be subsequently reinstated, as per control measures BD19 (mitigation, enhancement and compensation planting) and BD20 (reinstatement of linear habitat features).

8.8.31 Control measures BD4 (biosecurity practice for aquatic INNS and amphibian protection) and BD18 (biosecurity measures to reduce the spread of INNS) will prevent the spread of INNS to the site which may result in loss or degradation of habitats available to aquatic features.

8.8.32 Given the temporary nature and restricted scale of habitat loss associated with each watercourse, in combination with control measures, there are **unlikely to be significant effects** for minor watercourses from permanent or temporary loss of habitats or fragmentation.

Degradation of habitat through frac-out

8.8.33 The River Fromus tributary will not be crossed through trenchless methods. Other minor watercourses will be crossed by trenchless methods and the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with control measure BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of frac-out. As such, there are **unlikely to be significant effects** for minor watercourses or tributaries through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.34 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for minor watercourses from degradation of habitats through changes in air quality.

8.8.35 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for minor watercourses from degradation of habitats through changes in water quality or quantity.

Other ancient and veteran trees

8.8.36 Other ancient and veteran trees (i.e. those that are not included within other ecological feature groupings) as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) have been valued at National importance.

8.8.37 The assessment of the ecological features is affected by the scenarios outlined for the Proposed Onshore Scheme. Assessment of the ecological features is also affected by the options relating to the proposed Underground HVAC Cable Corridor.

Habitat loss and fragmentation

8.8.38 Under the Amendment to Kiln Lane Substation Scenario a number of veteran trees would be subject to incursions into the RPA and/or potential crown management to facilitate accesses for construction (T522S, T525S, T655S, T674S and T843S). These trees sit beside existing roads or tracks which would be used for construction access, or the RPA falls within the LoD for proposed new access routes.

8.8.39 Further veteran trees are present within or immediately adjacent to the DOL (T875S, T655S, T841S, T809S, T733S, T974S T861S, T862S). These trees occur

in woodland edges or boundary features on the edge of potential construction or mitigation areas, such as surrounding the proposed Converter Station, the access over the River Fromus or the Kiln Lane Substation.

8.8.40 Under the Full Build Out of Kiln Lane Substation Scenario, in addition to the trees listed above, further veteran trees would be subject to incursions into the RPA and/or potential crown management to facilitate accesses for construction (T961S, T938S and T940S) or they are present immediately adjacent to DOL (T974S).

8.8.41 Under the Southern Route Option, the RPA of ancient tree (T524S) falls within the LoD for the proposed Underground HVAC Cable Corridor.

8.8.42 Two features are not affected by the delivery scenarios or options;

a. A potential veteran tree within a tree line connecting Darsham Road and The Wilderness (Darsham) CWS woodland will be crossed through trenchless techniques and is therefore not subject to potential habitat loss.
b. A veteran tree adjacent to Hinton Road, north of Ten Acre Covert falls within the DOL within a mitigation area, where a flight line for bats between Great Wood and the Minsmere-Walberswick designated sites will be strengthened, which will not adversely impact the veteran tree.

8.8.43 Where ancient and veteran trees are present within or adjacent to the DOL, further design refinement will seek to avoid impacts through positioning of construction accesses or cable routing, as defined in embedded mitigation measure EM2 (micro-siting and routing to avoid sensitive features). Additionally, as per control measure BD2 (protection of valuable features during trenchless techniques), suitable fencing will be installed around veteran or ancient trees within or adjacent to the DOL, to implement buffer zones and areas of no deviation to protect the features. These buffers will be specified by arboricultural advice following Natural England guidelines. No direct loss of ancient and veteran trees is therefore anticipated to result from the Proposed Onshore Scheme.

8.8.44 Arboricultural surveys may identify the presence of further veteran and/or ancient trees, particularly within the areas of the Proposed Onshore Scheme which do not overlap with the Sea Link project and have therefore not been subject to dedicated arboricultural survey. Further design development will take account of such findings to avoid the direct loss or deterioration of ancient and veteran trees as per embedded mitigation measure EM2 (micro-siting and routing to avoid sensitive features).

8.8.45 In the absence of additional mitigation, the use of existing roads or tracks for construction access that fall within the RPA of ancient or veteran trees could result in negative impacts to the trees. The use of the roads or tracks for construction may result in a requirement to prune overhanging branches for safety or access reasons. The use of agricultural tracks by construction plant could potentially require re-surfacing works which could damage soil structure and root systems. Use of heavy machinery (above existing background levels of

agricultural use) could also result in soil compaction that could damage tree roots. These impacts could result in the deterioration of the health of retained veteran trees adjacent to construction accesses, and potentially their indirect loss. This would result in a **Major adverse** effect which is **significant** at the National scale.

Degradation of habitat through frac-out

8.8.46 A potential veteran tree within tree line connecting Darsham Road and the Wilderness (Darsham) CWS woodland will be crossed through trenchless methods.

8.8.47 As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) also including clean-up procedures in the unlikely event of frac-out. As such, there are **unlikely to be significant effects** for other ancient or veteran trees through degradation of habitat resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.48 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland (used as a proxy for veteran trees) with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for known veteran and ancient trees ranges from approximately 15kgN/ha/yr to 18kgN/ha/yr above the CL. Local contributions are largely attributed to livestock with the total contributions attributed to all road transport ranging from 4.7% to 7.4%. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.49 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the ancient and veteran trees not considered in other feature groupings through habitat degradation as a result of nitrogen deposition.

8.8.50 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for the ancient and veteran trees not considered in other feature groupings from degradation of habitats through changes in air quality.

8.8.51 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure

BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for ancient and veteran trees not considered in other feature groupings from degradation of habitats through changes in water quality or quantity.

Other woodlands

8.8.52 Other woodlands (i.e. those that are not included within other ecological feature groupings) as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) associated with the Proposed Onshore Scheme have been valued from Local to National importance.

8.8.53 The assessment of the ecological features is affected by the scenarios outlined for the Proposed Onshore Scheme. Assessment of the ecological features is also affected by the options relating to the Northern and Southern Route options for the proposed Underground HVAC Cable Corridor.

Habitat loss and fragmentation

8.8.54 Under the Amendment to Kiln Lane Substation Scenario, other woodlands not considered as part of other ecological feature groupings occur adjacent to the DOL in numerous locations. This includes several woodlands adjacent to the Southern Route option for the proposed Underground HVAC Cable Corridor.

8.8.55 Laurel Covert falls within the DOL for the Full Build Out of Kiln Lane Substation Scenario. Works within Laurel Covert are limited to a Public Rights of Way diversion route through the woodland and are not anticipated to result in habitat loss. Additional other woodlands are present adjacent to the DOL for this delivery scenario, namely Rudley's Grove and New Covert.

8.8.56 As per embedded mitigation measure EM2 (micro-siting and routing to avoid sensitive features), for all woodlands occurring adjacent to the DOL, micro-siting and routing of cabling, construction areas and access routes will be undertaken to avoid woodland loss. Additionally, as per control measure BD2 (protection of valuable features during trenchless techniques), where woodlands are adjacent to the DOL, suitable fencing will be installed to implement buffer zones and areas of no deviation to protect the features. These buffers will be specified by arboricultural advice following detailed arboricultural survey.

8.8.57 By avoidance through design refinement and control measures, no loss of other woodlands (those not considered as part of other feature groupings) will result from the Proposed Onshore Scheme. Consequently, there are **unlikely to be significant effects** for other woodlands from permanent or temporary loss or fragmentation of habitats.

Degradation of habitat through frac-out

8.8.58 Other woodlands not considered as part of other ecological feature groupings, will not be crossed through trenchless methods and as such no potential for impact through degradation of habitat resulting from frac-out is identified.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.59 APIS (Ref 28) provides available empirical CL for broadleaved deciduous woodland with a minimum CL of 10 kgN/ha/yr. The existing nitrogen deposition levels for ancient woodlands (including provisional ancient woodlands from SBIS) trees ranges from approximately 15.5kgN/ha/yr to 18.5kgN/ha/yr above the CL. Local contributions are largely attributed to livestock with the total contributions attributed to all road transport ranging from approximately 7.3% to 7.9%. Short term increases in local road transport emissions are unlikely to result in negative impacts unless the change in deposition rate is very large, which is not anticipated to be the case for the Proposed Onshore Scheme.

8.8.60 Screening of air quality impacts and further assessment as necessary against final traffic data provided for the Proposed Onshore Scheme will be undertaken to inform the ES and HRA. The preliminary assessment, based upon the factors described above, is that there are **unlikely to be significant effects** to the ancient woodlands not considered in other feature groupings through habitat degradation as a result of nitrogen deposition.

8.8.61 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for woodlands not considered in other feature groupings from degradation of habitats through changes in air quality.

8.8.62 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through control measure BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** woodlands not considered in other feature groupings from degradation of habitats through changes in water quality or quantity.

Other hedgerows and tree lines

8.8.63 Other hedgerows and tree lines as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.2 Baseline Report – Habitat Classification**) associated with the Proposed Onshore Scheme have been valued from Local to County importance.

8.8.64 The assessment of the ecological features is affected by the scenarios outlined for the Proposed Onshore Scheme. Assessment of the ecological features is also affected by the options relating to the Northern and Southern Route options for

the proposed Underground HVAC Cable Corridor, as well as the Western and Eastern Route options for the proposed Underground HVDC Cable Corridor.

Habitat loss and fragmentation

8.8.65 As per embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features), the use of trenchless techniques and micro-siting of the proposed Underground Cable Corridor and construction areas would avoid the loss of a number of tree lines and hedgerows which would otherwise be severed by the construction corridor. As per control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques), where these features are retained, suitable buffers and areas of no deviation will be implemented to ensure protection of these features throughout the construction period.

8.8.66 Under both delivery scenarios, construction works within the proposed Underground Construction Corridor could result in the worst-case loss of the following lengths of hedgerow or tree line (lengths are per feature):

a. three hedgerows within the Southern Route option for the proposed Underground HVAC Cable Corridor for up to 94m;
b. two lines of trees within the Northern Route option for the proposed Underground HVAC Cable Corridor for up to 63m; and
c. two lines of trees and 30 hedgerows within the Western Route option for the proposed Underground HVDC Cable Corridor for up to 46m.

8.8.67 As per control measure BD10 (reduced cable corridor working widths to avoid sensitive features), working widths at linear boundary features of ecological value will be reduced to require clearance of lengths of up to 52m for the Southern Route option, 27m for the Northern Route option and 19.5m for all proposed Underground HVDC Cable Corridor options. The reduced construction width will also target available gaps between mature and semi-mature trees within the linear features wherever possible, to minimise tree loss.

8.8.68 Under the Full Build Out of Kiln Lane Substation Scenario, up to a further seven lines of trees and 51 hedgerows may be partially lost to facilitate access routes or haul routes, including suitable visibility splays for construction traffic at proposed construction accesses. Under the Amendment to Kiln Lane Substation Scenario, 15 fewer hedgerows (i.e. 36 total) would be partially lost to facilitate access routes or haul routes, including suitable visibility splays for construction traffic at proposed construction accesses.

8.8.69 Hedgerows that may be partially lost to facilitate construction accesses and the length of loss will be variable dependent upon the existing road conditions and status of vegetation present. As per control measure BDXX (reduction of vegetation loss for access), assessment will be made on a case-by case basis for the potential for alternative methods to reduce the extent of vegetation loss,

such as the use of suitable traffic management to avoid or reduce the requirement for visibility splays. This will focus on ensuring the retention of valuable ecological features within hedgerows or lines of trees which are not feasible to reinstate, such as mature trees.

8.8.70 The vast majority of losses described above will be temporary in nature, being reinstated following construction. As per control measure BD11 (sectional removal of hedgerows), where ecologically valuable hedgerow sections require removal, they should be removed in short sections with root balls intact to facilitate acceleration of reinstatement. Where the sections of hedgerows or tree lines are not removed intact, reinstatement will utilise species of local provenance to maintain or enhance existing biodiversity features as per control measure BD19 (mitigation, enhancement and compensation planting). As per control measure BD20 (reinstatement of linear habitat features), whilst planting of trees within the cable easement will not be permitted, planting of hedgerow shrubs will be utilised to restore connectivity of the linear features. Where tree loss is unavoidable, as per control measure BD21 (planting of compensatory trees), compensatory tree planting would occur within the same boundary feature wherever feasible, outside of the cable easement and within the DOL.

8.8.71 Permanent losses of hedgerow would be limited to small sections where the permanent accesses are required to the proposed Converter Station and Kiln Lane Substation. If loss of mature trees is unavoidable through further design refinement, their loss is considered to be a permanent impact as these features cannot be readily reinstated. Whilst this may be reduced through further design refinement, at this preliminary stage the loss of mature trees within hedgerows and lines of trees would have a permanent impact to the structure and function of this habitat that would result in a **Moderate adverse** effect which is **significant** at up to County scale.

Degradation of habitat through frac-out

8.8.72 Many hedgerows and tree lines will be crossed by trenchless methods. As outlined in control measure BD9 (minimise the risk of frac-out and clean up procedures), the risk of frac-out will be minimised by utilising ground investigation data to inform the design of trenchless methods at suitable depths, with BD9 (minimise the risk of frac-out and clean up procedures) also including bespoke clean-up procedures in the unlikely event of frac-out. As such, there are **unlikely to be significant effects** for other hedgerows and tree lines through habitat degradation resulting from frac-out.

Degradation of habitat through changes in air quality, water quality or quantity

8.8.73 Potential dust deposition impacts will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). As such there are **unlikely to be significant effects** for hedgerows and treelines not considered in other feature groupings from degradation of habitats through changes in air quality.

8.8.74 Potential impacts from construction activities, such as pollution events or sediment run-off, will be mitigated through control measure BD8 (pollution prevention measures and sustainable construction drainage design). Impacts to groundwater dependent ecosystems will be managed through BDYY (management of impacts upon groundwater dependent terrestrial ecosystems). These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** to other hedgerows and treelines from degradation of habitats through changes in water quality or quantity.

Badger social group associated with land north of Redhouse Farm, Sternfield

8.8.75 This ecological feature as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.8 Baseline Report – Badger Survey**) has been valued at Local importance. The assessment is not altered by the scenarios outlined for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios are taken forward. Assessment is affected by the options relating to the Northern and Southern Route options for the proposed Underground HVAC Cable Corridor.

Habitat loss and fragmentation

8.8.76 The badger social group associated with land north of Redhouse Farm, Sternfield has a main badger sett approximately 30m from the Southern Route option for the proposed Underground HVAC Cable Corridor and approximately 120m from the Northern Route option for the proposed Underground HVAC Cable Corridor.

8.8.77 No direct impacts will occur to the identified setts associated with this badger social group due to the distance from the nearest sett to the Northern Route option for the proposed Underground HVAC Cable Corridor and the implementation of suitable construction buffers set out in control measure BD2 (protection of valuable features during trenchless techniques) for the Southern Route option for the proposed Underground HVAC Cable Corridor.

8.8.78 The surrounding habitat to the main sett particularly the hedgerows, woodlands and grassland are likely to be utilised by this badger social group for foraging. Connectivity to areas likely to be utilised by this badger social group has been maintained by the Proposed Onshore Scheme, notably the woodland to the north of the main sett and lowland meadow north of the B1119, under both route options.

8.8.79 Removal of short sections of hedgerow for construction of the proposed Underground Cable Corridor and construction accesses, within a phased works plan, would represent a negligible temporary reduction in the quantity of foraging habitat available to badgers. Upon completion of the works, the hedgerows will be reinstated as detailed within control measures BD11 (sectional removal of hedgerows), BD19 (mitigation, enhancement and compensation planting) and BD20 (reinstatement of linear habitat features).

8.8.80 As such there are **unlikely to be significant effects** through habitat loss or fragmentation to the badger social group associated with land north of Redhouse Farm, Sternfield.

Direct mortality and injury

8.8.81 Control measure BD5 (measures to exclude or protect fauna) will ensure badgers are excluded from proposed working areas and excavations which are left exposed have means for badgers to escape.

8.8.82 Should additional setts be discovered within the DOL, control measure BD14 (compliance with protected species legislation and licensing) will ensure that closure of these setts (if unavoidable) will comply with relevant protected species legislation. As such there are **unlikely to be significant effects** relating to direct mortality and injury to the badger social group associated with land north of Redhouse Farm, Sternfield.

Disturbance

8.8.83 Construction works will not occur within 30m of badger setts and control measure BD6 (lighting restrictions to minimise disturbance to fauna) restricts the level of construction activity taking place during the night. As such there are **unlikely to be significant effects** through disturbance to the badger social group associated with land north of Redhouse Farm, Sternfield.

Other badger social groups

8.8.84 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.8 Baseline Report – Badger Survey**) have been valued at Local importance.

8.8.85 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.86 Badgers belonging to other social groups are likely to utilise habitats within the DOL for foraging and commuting. A small number of outlying setts are also present within the DOL. No impacts will occur to known badger setts due to the implementation of suitable construction buffers set out in control measure BD2 (protection of valuable features during trenchless techniques) and there are **unlikely to be significant effects**.

8.8.87 The embedded mitigation measures (EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features)) will result in the highest value ecological habitats being retained (such as watercourses, woodlands and woodland edge habitat, dense well-established hedgerows, and tree lines). As per control measures BD1 (limits

construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques), where these features are retained suitable buffers and areas of no deviation will be implemented to ensure their protection throughout the construction period. These measures will avoid impacts to the majority of foraging habitat likely to be utilised by other badger social groups.

8.8.88 Removal of short sections of hedgerow for construction of the proposed Underground Cable Corridor and construction accesses, within a phased works plan, are likely to have a negligible temporary reduction on the quantity of foraging habitat available to badgers. Upon completion of the works, the hedgerows will be reinstated as detailed within control measures BD11 (sectional removal of hedgerows), BD19 (mitigation, enhancement and compensation planting) and BD20 (reinstatement of linear habitat features).

8.8.89 As such, there are **unlikely to be significant effects** through habitat loss or fragmentation to other badger social groups.

Direct mortality and injury

8.8.90 Control measure BD5 (measures to exclude or protect fauna) will ensure badgers are excluded from working areas and excavations which are left exposed have means for badgers to escape.

8.8.91 Should additional setts be discovered within the DOL, control measure BD14 (compliance with protected species legislation and licensing) will ensure that closure of these setts (if unavoidable) will comply with relevant protected species legislation. As such there are **unlikely to be significant effects** through direct mortality and injury to other badger social groups.

Disturbance

8.8.92 Construction works will not occur within 30m of badger setts and control measure BD6 (lighting restrictions to minimise disturbance to fauna) restricts the level of construction activity taking place during the night. As such there are **unlikely to be significant effects** through disturbance to other badger social groups.

Reptile populations within plantation at Middleton Moor

8.8.93 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.7 Baseline Report – Herpetofauna Survey**) have been valued at Local importance.

8.8.94 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.95 A low population of grass snake and common lizard associated with the young plantation woodland at Middleton Moor is present within the DOL with a single adult common lizard and a peak of four grass snake recorded during the survey as identified in **Appendix 8.7 Baseline Report – Herpetofauna Survey**. This reptile population will utilise the woodland to forage, bask and shelter. Grass snakes may move several kilometres each day (Ref 37), so the plantation woodland at Middleton Moor is likely to represent a relatively small part of their home range within a wider network of habitats (including hedgerows, ditches, ponds, grassland and woodlands).

8.8.96 The worst-case scenario will result in the temporary loss of approximately 0.4ha of plantation woodland, with the proposed Underground Cable Corridor construction width of 46m. However, as per control measure BD10 (reduced cable corridor working widths to avoid sensitive features) with further design development this is likely to reduce to a working width closer to 19.5m at the sensitive crossing point. Replanting of trees within the cable easement is not feasible and this area would be reinstated as species-rich grassland and scrub. This would provide suitable habitat for reptiles and may increase the carrying capacity for these species in the long-term, compared to the closed canopy woodland that would be likely to develop in the absence of the Proposed Onshore Scheme.

8.8.97 Due to their temporary nature and relatively small scale, losses of plantation woodland east of Middleton Moor would not result in an impact to the favourable conservation status of reptile populations and there is **unlikely to be a significant effect** from habitat loss or fragmentation.

Direct mortality, injury and disturbance

8.8.98 Control measure BD15 (reptile translocation) will ensure reptiles are displaced from working areas into adjacent suitable habitat prior to construction works. Control measure BD5 (measures to exclude or protect fauna) would ensure that suitable fencing would exclude reptiles from construction areas where required. As such there are **unlikely to be significant effects** through direct mortality, injury or disturbance to reptile populations within the plantation woodland at Middleton Moor.

Reptile populations associated with the Minsmere Old River Floodplain

8.8.99 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.7 Baseline Report – Herpetofauna Survey**) have been valued at County importance.

8.8.100 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.101 Reptile populations are likely to be associated with the with the Minsmere Old River Floodplain which is located within the DOL. No direct habitat loss of the Minsmere Old River or associated floodplain will occur as a result of construction, with trenchless methods (including suitable buffers) for cabling to be employed.

8.8.102 As such, there are **unlikely to be significant effects** for the reptile populations associated with the Minsmere Old River Floodplain resulting from habitat loss or fragmentation.

Direct mortality, injury and disturbance

8.8.103 No construction works are proposed within the Minsmere Old River Floodplain, as such there are **unlikely to be significant effects** through direct mortality, injury or disturbance to associated reptile populations.

Other reptile populations

8.8.104 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.7 Baseline Report – Herpetofauna Survey**) have been valued at Local importance.

8.8.105 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.106 Small numbers of widespread reptile species (slow-worm, common lizard, grass snake and adder) are potentially associated with agricultural field margins within the proposed Underground Cable Corridor. The removal of short sections of hedgerows (typically up to 20m) and their associated margins within a phased works plan would represent a small and temporary reduction on the quantity of foraging habitat available to reptile populations. Upon completion of the works, the hedgerows and margins will be reinstated as detailed within control measures BD11 (sectional removal of hedgerows), BD19 (mitigation, enhancement and compensation planting) and BD20 (reinstatement of linear habitat features).

8.8.107 As such there are **unlikely to be significant effects** through habitat loss or fragmentation to other reptile populations that may use agricultural field margins within the proposed Underground Cable Corridor.

Direct mortality, injury and disturbance

8.8.108 Control measure BD15 (reptile translocation) will ensure reptiles are displaced from working areas into adjacent suitable habitat prior to construction works. Control measure BD5 (measures to exclude or protect fauna) would ensure that suitable fencing would exclude reptiles from construction areas where required.

As such there are **unlikely to be significant effects** through direct mortality, injury or disturbance to other reptile populations that may use agricultural field margins within the proposed Underground Cable Corridor.

Bats (Annex II species)

8.8.109 The barbastelle bat population as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.9 Baseline Report – Bat Roost Survey, Appendix 8.10 Baseline Report – Bat Activity Survey & Appendix 8.11 Baseline Report – Advanced Bat Survey**) using habitats within the DOL is valued as being of District importance.

8.8.110 The assessment of this feature is altered by the scenarios for the Proposed Onshore Scheme. The assessment is not altered by the options, on the basis that the works within the vicinity of the feature are the same irrespective of which options are taken forward.

Habitat loss and fragmentation.

8.8.111 Embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques) would ensure that the areas of habitat most suitable for barbastelle roosting, foraging and commuting within the DOL are retained and not impacted by construction.

Roosting

8.8.112 ALBST surveys revealed that barbastelle bats foraging within the Proposed Onshore Scheme are from a maternity colony 6km to west of the Proposed Onshore Scheme. This colony will not be impacted by the Proposed Onshore Scheme.

8.8.113 No barbastelle roosts have been identified within the DOL. There are multiple trees within hedgerows and tree lines within the DOL that could potentially be impacted by the Proposed Onshore Scheme. ALBST surveys have indicated that breeding roosts are unlikely to be present within the DOL for the Proposed Onshore Scheme. However, these trees are considered to have the potential to support non-breeding barbastelle roosts.

8.8.114 Whilst further design refinement is likely to be able to avoid trees with significant roosting potential, at this preliminary stage it is assumed that roosts could be lost. Under control measure BD14 (compliance with protected species legislation and licensing) (NE Mitigation licencing and mitigation) roosts would be preferably relocated via salvaging of the roost feature and mounting on suitable alternative trees, or through roost replacement with bat boxes. These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for Annex II bat species through impacts to roosts.

Foraging and commuting

8.8.115 Construction of the Proposed Onshore Scheme would require permanent loss of hedgerow under the Full Build Out of Kiln Lane Substation Scenario. At the Kiln Lane Substation, loss of approximately 330m of hedgerow providing connectivity to adjacent woodlands would be required to facilitate construction of Kiln Lane Substation. This hedgerow is used by barbastelle in low to moderate numbers (assessed through activity surveys) for commuting and foraging habitat. The permanent loss of this hedgerow would have an impact to the favourable conservation status of barbastelle bats that would result in a **Minor adverse** effect which is **significant** at the Local scale.

8.8.116 Up to 63 hedgerows and seven tree lines will be bisected by the proposed Underground HVDC Cable Corridor and up to three hedgerows and three tree lines by the proposed Underground HVAC Cable Corridor. For all mature hedgerows and tree lines that are likely to be of value to barbastelle bat, control measure BD10 (reduced cable corridor working widths to avoid sensitive features) will be implemented to minimise the loss of hedgerow to up to 20m sections for the proposed Underground HVDC Cable trench and up to 52m for the proposed Underground HVAC Cable trench. Under control measure BD20 (reinstatement of linear habitat features) hedgerows will be reinstated post-construction in these sections. Barbastelle bats have large core sustenance zones of approximately 6km. Given the retention of the vast majority of suitable foraging habitat within the DOL, and the availability of similar habitats within the wider landscape, the temporary loss of short hedgerow sections is considered to represent a small reduction in foraging habitat for barbastelle that is **unlikely to result in a significant effect** upon the population.

8.8.117 Regularly used commuting routes for barbastelle have been identified primarily along the Dunwich River (through static detector surveys). The main hedgerow along Dunwich River will be retained through installation by trenchless techniques and will not be impacted. The hedgerows surrounding this location will be removed for sections up to 20m in length, which could reduce their use by barbastelle bats. Control measure BD13 ('dead hedging' to preserve wildlife corridors) will be employed to retain connectivity along key commuting routes during and immediately following construction. Hedgerows will be reinstated along these routes under control measure BD2 (protection of valuable features during trenchless techniques). As such, there are **unlikely to be significant effects** for the barbastelle population from habitat fragmentation.

Direct mortality and injury

8.8.118 If barbastelle roosts are identified within trees to be lost during pre-construction surveys, bats would be excluded under licensed mitigation as per control measure BD14 (compliance with protected species legislation and licensing) to ensure that no bats are harmed. No other construction works are identified as posing a risk to individual bats. As such, there are **unlikely to be significant effects** for the barbastelle population from direct mortality and injury.

Disturbance

8.8.119 Due to the distance between known barbastelle roosts and construction activities, no disturbance impacts to roosting barbastelle are anticipated. Control measure BD6 (lighting restrictions to minimise disturbance to fauna) restricts the level and type of construction activity taking place during the night, therefore limiting impacts from noise, vibrations or artificial lighting upon foraging and commuting barbastelle. As such, there are **unlikely to be significant effects** for the barbastelle population from disturbance.

Bats (non-Annex II species categorised as rarer or with a restricted distribution)

8.8.120 The serotine, Leisler's bats and Nathusius' pipistrelle populations as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.9 Baseline Report – Bat Roost Survey, Appendix 8.10 Baseline Report – Bat Activity Survey & Appendix 8.11 Baseline Report – Advanced Bat Survey**) which use habitats within the DOL are valued as being of District importance.

8.8.121 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.122 Embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques) would ensure that the areas of habitat most suitable for roosting, foraging and commuting within the DOL are retained and not impacted by construction.

Roosting

8.8.123 No Leisler's bat or Nathusius' pipistrelle roosts have been identified within the DOL. A single solitary (non-breeding) serotine roost was identified within 50m of the DOL in proximity to Friston (Full Build Out of Kiln Lane Substation Scenario). This serotine roost will be retained and no impacts to this roost are anticipated and there are **unlikely to be significant effects**.

8.8.124 Serotine bats typically roost in buildings or structures, all of which will be avoided, with no potential impacts to serotine roosts identified. There are multiple trees within hedgerows and tree lines that could support Leisler's bats and Nathusius' pipistrelle roosts which could potentially be impacted by the Proposed Onshore Scheme. Whilst design refinement is likely to be able to avoid such trees, on a preliminary basis it is assumed that roosts could be lost. Under control measure BD14 (compliance with protected species legislation and licensing) (NE Mitigation licencing and mitigation) roosts would be replaced via salvaging of the roost

feature which will be mounted on suitable alternative trees. These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for rarer bat species and those with restricted distribution through impacts to roosts.

Foraging and commuting

8.8.125 The permanent loss of hedgerow in proximity to Kiln Lane Substation, and the temporary loss of hedgerows elsewhere across the DOL, are considered to represent a negligible reduction in foraging and commuting habitat for serotine, Leisler's bats and Nathusius' pipistrelle. These species typically forage within open habitats including arable/pasture and riparian habitats and all three species have large core sustenance zones between 3-4km. Given the retention of the vast majority of suitable foraging habitat within the DOL and the availability of similar habitats within the wider landscape, the loss of hedgerow is **unlikely to represent a significant effect** to this bat feature grouping through loss of foraging habitat.

8.8.126 Serotine, Leisler's bats and Nathusius' pipistrelle are high flying species which are less reliant on hedgerows to navigate across the landscape. The permanent and temporary loss of short sections of hedgerows across the DOL is **unlikely to represent a significant effect** upon commuting by these species.

Direct mortality and injury

8.8.127 If roosts for Leisler's bats and Nathusius' pipistrelle are identified within trees to be lost during pre-construction surveys, bats would be excluded under licensed mitigation as per control measure BD14 (compliance with protected species legislation and licensing) to ensure that no bats are harmed. As noted previously, serotine typically roost within buildings or structures and would not be expected to roost in trees. No other construction works are identified as posing a risk to individual bats. As such, there are **unlikely to be significant effects** for Leisler's bats, serotine and Nathusius' pipistrelle populations from direct mortality and injury.

Disturbance

8.8.128 No Nathusius' pipistrelle or Leisler's bat roosts have been identified within the DOL, therefore no roosts are anticipated to be disturbed. A single non-breeding serotine roost identified within a residential building approximately 50m from the DOL in proximity to Friston will be retained. Due to the distance between the roost and construction activities, no disturbance impacts to roosting serotine are anticipated. Control measure BD6 (lighting restrictions to minimise disturbance to fauna) restricts the level and type of construction activity taking place during the night, therefore limiting disturbance impacts from noise, vibrations or artificial lighting upon foraging and commuting bats. As such, there are **unlikely to be significant effects** for the serotine, Leisler's bats and Nathusius' pipistrelle populations from disturbance.

Bats (non-Annex II species categorised as widespread but not abundant)

8.8.129 The Daubenton's bat, Natterer's bat and noctule populations as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.9 Baseline Report – Bat Roost Survey, Appendix 8.10 Baseline Report – Bat Activity Survey & Appendix 8.11 Baseline Report – Advanced Bat Survey**) which use habitats within the DOL are valued as being of County importance.

8.8.130 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.131 Embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques) would ensure that the areas of habitat most suitable for roosting, foraging and commuting within the DOL are retained and not impacted by construction.

Roosting

8.8.132 No Daubenton's bat, Natterer's bat or noctule roosts have been identified within the DOL. Two Natterer's maternity roosts were identified within the wider landscape of the EIA Scoping Boundary. All roosts will be retained, and the Natterer's colonies will not be impacted by construction of the Proposed Onshore Scheme.

8.8.133 There are multiple trees within hedgerows and tree lines that could support Daubenton's bat, Natterer's bat or noctule roosts which could potentially be impacted by the Proposed Onshore Scheme. Whilst design refinement is likely to be able to avoid such trees, on a preliminary basis it is assumed that roosts could be lost. Under control measure BD14 (compliance with protected species legislation and licensing) (NE Mitigation licencing and mitigation) roosts would be replaced via salvaging of the roost feature which will be mounted on suitable alternative trees. These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for bats categorised as widespread but not abundant, through impacts to roosts.

Foraging and commuting

8.8.134 Construction of the Proposed Onshore Scheme may require permanent loss of hedgerows at Kiln Lane Substation. The permanently impacted hedgerows within the DOL at the Kiln Lane Substation were infrequently used by Daubenton's bat or Natterer's bat, and noctules are typically associated with foraging in open arable/pasture habitats and therefore less reliant on hedgerows as a foraging

resource. The permanent loss of hedgerow at Kiln Lane Substation is **unlikely to represent a significant effect** on these species.

8.8.135 Up to 63 hedgerows and seven tree lines will be bisected by the proposed Underground HVDC Cable Corridor and up to three hedgerows and three tree lines by the proposed Underground HVAC Cable Corridor. For all mature hedgerows and tree lines that are likely to be of value to Daubenton's bat, Natterer's bat, and noctule, control measure BD10 (reduced cable corridor working widths to avoid sensitive features) will be implemented to minimise the loss of hedgerow to up to 20m sections for the proposed Underground HVDC Cable trench and up to 52m for the proposed Underground HVAC Cable trench. Under control measure BD20 (reinstatement of linear habitat features) hedgerows will be reinstated post-construction in these sections. Each of these species has moderate to large core sustenance zones ranging from 2-4km. Given the retention of the vast majority of suitable foraging habitat within the DOL, and the availability of similar habitats within the wider landscape, the temporary loss of short hedgerow sections is considered to represent a small reduction in foraging habitat for these species that is **unlikely to result in a significant effect** upon their populations.

8.8.136 ALBST has identified an important commuting route for Natterer's bats along Lodge Road, to the west of Walberswick. Short sections of the hedgerows lining Lodge Road will be temporarily lost during construction, which could reduce their use by Natterer's bats. This commuting route is in proximity to a Natterer's maternity roosts within Hoist Covert (outside of the DOL) and is likely an important commuting feature and flight line for this colony. Control measure BD13 ('dead hedging' to preserve wildlife corridors) will be employed to retain connectivity along key commuting routes during and immediately following construction. In addition, hedgerows will be reinstated along these routes under control measure BD2 (protection of valuable features during trenchless techniques). As such, there are **unlikely to be significant effects** for the Natterer's bat population (or other species using Lodge Road) from habitat fragmentation.

8.8.137 Daubenton's bats are typically associated with aquatic habitats and are less reliant on hedgerows. Most records of this species were in proximity to aquatic habitats such as those found near Walberswick and Minsmere Cut, which will be retained. The effects of permanent and temporary hedgerow loss and habitat fragmentation is negligible for this species. Control measure BD13 ('dead hedging' to preserve wildlife corridors) described above for Natterer's bats will also apply to Daubenton's bats which have been recorded in low numbers along Lodge Road.

8.8.138 Noctule are a high-flying species which is less reliant on hedgerows to navigate across the landscape. The permanent and temporary loss of short section of hedgerows across the DOL is **unlikely to be a significant effect** upon noctule as hedgerows do not represent a key navigational feature for commuting.

Direct mortality and injury

8.8.139 If Daubenton's bat, Natterer's bat or noctule roosts are identified within trees to be lost during pre-construction surveys, bats would be excluded under licensed mitigation as per control measure BD14 (compliance with protected species legislation and licensing) to ensure that no bats are harmed. No other construction works are identified as posing a risk to individual bats. As such, there are **unlikely to be significant effects** for Daubenton's bat, Natterer's bat and noctule populations from direct mortality and injury.

Disturbance

8.8.140 No noctule or Daubenton's bat roosts have been identified, and no Natterer's roosts were identified within the DOL. Two Natterer's roosts were however identified within the wider landscape at distances from construction works where no roost disturbance would be anticipated.

8.8.141 Control measure BD6 (lighting restrictions to minimise disturbance to fauna) restricts the level and type of construction activity taking place during the night, therefore limiting significant impacts from noise, vibrations or artificial lighting upon foraging and commuting bats. As such, there are **unlikely to be significant effects** for the Daubenton's bat, Natterer's bat and noctule populations from disturbance.

Bats (non-Annex II species categorised as widespread)

8.8.142 The common pipistrelle, soprano pipistrelle, and brown long-eared bat populations as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.9 Baseline Report – Bat Roost Survey, Appendix 8.10 Baseline Report – Bat Activity Survey & Appendix 8.11 Baseline Report – Advanced Bat Survey**) using habitats within the DOL are valued as being of County importance.

8.8.143 The assessment of this feature is altered by the scenarios and options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.144 Embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques) would ensure that the areas of habitat most suitable for roosting, foraging and commuting bats within the DOL are retained and not impacted by construction.

Roosting

8.8.145 One brown long-eared bat maternity roost was located within the DOL in Sallow Walk Covert, which is an area to be crossed by trenchless cabling which will

therefore be retained. Multiple other roosts including common pipistrelle maternity, soprano pipistrelle maternity and a brown long-eared bat solitary (non-breeding) roosts were identified within the wider landscape, outside of the DOL.

8.8.146 There are multiple trees within hedgerows and tree lines that could support common pipistrelle, soprano pipistrelle and brown long-eared bat roosts which could potentially be impacted by the Proposed Onshore Scheme. Whilst further design refinement is likely to be able to avoid trees with significant roosting potential, at this preliminary stage it is assumed that roosts could be lost. Under control measure BD14 (compliance with protected species legislation and licensing) roosts would be preferably relocated via salvaging of the roost feature and mounted on suitable alternative trees, or through roost replacement with bat boxes. These measures are considered adequate to mitigate impacts, such that there are **unlikely to be significant effects** for common pipistrelle, soprano pipistrelle and brown long-eared bat through impacts to roosts.

Foraging and commuting

8.8.147 Construction of the Proposed Onshore Scheme may require the loss of approximately 330m of hedgerows at Kiln Lane Substation under the Full Build Out of Kiln Lane Substation Scenario. This hedgerow was infrequently used by soprano pipistrelle and brown long-eared bats but was frequently used by common pipistrelle. Common pipistrelle, soprano pipistrelle and brown long-eared bats are low flying species which have a similar foraging strategy of aerial hawking close to vegetation and are therefore more reliant on linear features such as hedgerows for foraging. The hedgerow to be lost at Kiln Lane Substation provides direct habitat connectivity to woodland to the east, adjacent to the DOL, which contains a common pipistrelle maternity roost. The permanent loss of this hedgerow would have an impact to the favourable conservation status of widespread non-Annex Ⅱ bat species that would result in a **Minor adverse** effect which is **significant** at the Local scale.

8.8.148 Construction of the Proposed Onshore Scheme may require the loss of approximately 200m of hedgerow with a mature tree line immediately to the east of the proposed Converter Station, to accommodate the proposed Underground Cable and wider LoD associated with the Northern Route option. This hedgerow and tree line was frequently used by foraging and commuting common pipistrelle and soprano pipistrelle. The loss of this habitat would have an impact to the favourable conservation status of widespread non-Annex Ⅱ bat species that would result in a **Minor adverse** effect which is **significant** at the Local scale**..**

8.8.149 ALBST has identified an important commuting route for common pipistrelle, soprano pipistrelle and brown long-eared bats along Lodge Road, to the west of Walberswick. In addition, ALBST identified a second important commuting route for soprano pipistrelle to the south of Severn Acres Lane in Walberswick. This hedgerow runs north to south, connecting Walberswick to the Dunwich River. Short sections of the hedgerows lining Lodge Road and south of Severn Acre

Lane will be temporarily lost during construction, which could reduce their use by these species. These routes are in proximity to the brown long-eared bat maternity roost in Sallow Walk Covert and two maternity roosts for common pipistrelle and soprano pipistrelle in Walberswick outside of the DOL. The hedgerows provide connectivity between these maternity roosts and valuable foraging habitats in the wider landscape. Control measure BD13 ('dead hedging' to preserve wildlife corridors) will be employed to retain connectivity along key commuting routes during and immediately following construction. In addition, hedgerows will be reinstated along these routes under control measure BD2 (protection of valuable features during trenchless techniques). As such, there are **unlikely to be significant effects** for the common pipistrelle, soprano pipistrelle and brown long-eared bat population (or other species using Lodge Road) from habitat fragmentation.

8.8.150 Up to 63 hedgerows and seven tree lines will be bisected by the Underground HVDC Cable Corridor and up to three hedgerows and three tree lines by the proposed Underground HVAC Cable Corridor. For mature hedgerows and tree lines that are likely to be of value to common pipistrelle, soprano pipistrelle and brown long-eared bats, control measure BD10 (reduced cable corridor working widths to avoid sensitive features) will be implemented to minimise the loss of hedgerow to up to 20m sections for the proposed Underground HVDC Cable trench and up to 52m for the proposed Underground HVAC Cable trench. Under control measure BD20 (reinstatement of linear habitat features) hedgerows will be reinstated post-construction in these sections. Common pipistrelle, soprano pipistrelle and brown long-eared bats have core sustenance zones ranging between 2-4km. Given the retention of the vast majority of suitable foraging habitat within the DOL, and the availability of similar habitats within the wider landscape, the temporary loss of short hedgerow sections is considered to represent a small reduction in foraging habitat for common pipistrelle, soprano pipistrelle and brown long-eared bats that is **unlikely to result in a significant effect** upon their populations.

Direct mortality and injury

8.8.151 If common pipistrelle, soprano pipistrelle and brown long-eared bat roosts are identified within trees to be lost during pre-construction surveys, bats would be excluded under licensed mitigation as per control measure BD14 (compliance with protected species legislation and licensing) to ensure that no bats are harmed. No other construction works are identified as posing a risk to individual bats. As such, there are **unlikely to be significant effects** for common pipistrelle, soprano pipistrelle and brown long-eared bat populations from direct mortality and injury.

Disturbance

8.8.152 One brown long-eared bat maternity roost was located within the DOL. Multiple other roosts including common pipistrelle, soprano pipistrelle and brown long-eared bat roosts were identified within the wider landscape. Control measure BD8 (pollution prevention measures and sustainable construction drainage design) includes construction noise and vibration and BD6 (lighting restrictions to minimise disturbance to fauna) restricts the level and type of construction activity taking place during the night. These measures are anticipated to limit impacts from noise, vibrations or artificial lighting upon roosting, foraging and commuting bats. As such, there are **unlikely to be significant effects** for the common pipistrelle, soprano pipistrelle and brown long-eared bat populations from disturbance.

Passage and breeding birds associated with inshore and beach habitats (Non-designated features)

8.8.153 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.16 Baseline Report – Inshore and Beach Breeding Bird Survey 2024**) have been valued at Local to County importance.

8.8.154 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.155 All species recorded were at distance to the shore, using inshore marine areas. Nearly all records were more than 500m from the proposed Landfall Site. There is no habitat loss or fragmentation associated with inshore areas as a result of the Proposed Onshore Scheme.

Direct mortality and injury

8.8.156 All species recorded were at distance to the shore, using inshore marine areas. Nearly all records were more than 500m from the Walberswick Landfall Extent. Given the terrestrial nature of the works and the mobility of birds, direct mortality and injury is considered unlikely to occur with the distance to these species in this feature grouping. If these species were to be present closer inshore, the control measures BD8 (pollution prevention measures and sustainable construction drainage design) and BD9 (minimise the risk of frac-out and clean up procedures) would further ensure that injury would be avoided.

8.8.157 As such, there are **unlikely to be significant effects** for passage and breeding birds associated with inshore and beach habitats from direct mortality or injury.

Disturbance

8.8.158 All species recorded were at distance to the shore, using inshore marine areas. Nearly all records were more than 500m from the Walberswick Landfall Extent. Given the distance to these birds and the terrestrial nature of the works, as well as the control measures BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), and BD17 (noise or visual barriers to minimise disturbance impacts), disturbance to birds within this feature grouping would be avoided.

8.8.159 As such, there are **unlikely to be significant effects** for passage and breeding birds associated with inshore and beach habitats from disturbance.

Breeding waterbird and wetland birds (Non-designated features)

8.8.160 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.15 Baseline Report – Breeding Bird Survey 2024**) have been valued at Local importance.

8.8.161 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.162 There are no permanent and temporary habitat losses associated with areas with wetland habitats, which have recorded birds within this feature grouping.

8.8.163 There are limited impacts to the River Fromus and an associated ditch, however these impacts are relatively minor and the habitat in this area is unlikely to support a significant number of wetland birds given the limited area impacted. The majority of these losses are not considered to be permanent given the reinstatement and proposed habitat creation surrounding the access to the proposed Converter Station. Only a small area of permanent loss would result from the footprint of the bridge approach ramps and access track.

8.8.164 Removal of these habitats during construction is not considered to substantially fragment habitats or dependent species, given the limited area impacted and the mobility of birds.

8.8.165 The Proposed Onshore Scheme will undertake HDD at water crossings, such as under the Minsmere New Cut. Nearly all wetland species in this feature grouping were, in part, associated with this area, either inside or outside the DOL.

8.8.166 Habitat loss during construction is **unlikely to result in a significant effect** to breeding waterbird and wetland birds.

Direct mortality and injury

8.8.167 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques) and BD3 (avoidance of valuable features through restrictions during vegetation clearance) will ensure that birds are not directly impacted from proposed working practice.

8.8.168 As such, there are **unlikely to be significant effects** for breeding waterbird and wetland birds from direct mortality or injury.

Disturbance

8.8.169 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing) and BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to birds within this feature grouping, is avoided and minimised, where possible.

8.8.170 Construction disturbance is to be avoided to breeding Cetti's warbler, as a Schedule 1 species of the Wildlife and Countryside Act 1981. Control measure BD14 (compliance with protected species legislation and licensing) similarly ensures that the Principal Contractor would comply with relevant protected species legislation.

8.8.171 As such, there are **unlikely to be significant effects** for breeding waterbird and wetland birds from disturbance.

Breeding birds associated with farmland habitats

8.8.172 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.15 Baseline Report – Breeding Bird Survey 2024**) have been valued at Local importance.

8.8.173 The assessment of the ecological features is affected by the scenarios. There is likely to be only a negligible difference in the options relating to the proposed Underground HVDC Cable Corridor.

Habitat loss and fragmentation

8.8.174 During construction of the Proposed Onshore Scheme, there will be temporary loss of arable habitat, hedgerows and lines of trees associated with field boundaries. These habitat types are used by farmland birds for foraging and nesting. Skylark will mostly nest in open habitat, foraging in the arable fields. Other farmland birds recorded in this feature will predominantly nest within vegetation, such as hedgerows, trees and scrub, associated with farmland.

8.8.175 During construction of the Proposed Onshore Scheme, hedgerows which cannot be avoided via trenchless techniques will be removed to facilitate proposed Underground Cable installation and provide access to the Kiln Lane Substation and the proposed Converter Station. Hedgerow loss would be permanent at Kiln Lane Substation and the proposed Converter Station, whereas all other hedgerows will be reinstated (post-construction) along the proposed Underground Cable Corridor or construction access routes. As per control measure BD10 (reduced cable corridor working widths to avoid sensitive features), working widths at linear boundary features of ecological value will be reduced to require clearance of lengths of up to 52m for the Southern Route option for the proposed Underground HVAC Cable Corridor, 27m for the Northern Route option for the proposed Underground HVAC Cable Corridor and 19.5m for the proposed Underground HVDC Cable Corridor.

8.8.176 Under the Full Build Out of Kiln Lane Substation Scenario, the Kiln Lane Substation (2.1 ha), and the proposed Converter Station (8.1 ha) would result in the permanent loss of approximately 10.1ha of arable farmland, supporting approximately four to six skylark territories. Proposed landscape mitigation for other features, for example screening of Kiln Lane Substation, is likely to result in the permanent loss of additional arable land. It is likely that a number of skylark would be displaced from the area due to edge effects from the permanent infrastructure and landscape planting, noting these species prefer open landscapes. Under the Amendment to Kiln Lane Substation Scenario the permanent loss of arable land to the Proposed Onshore Scheme would reduce by approximately 1.8ha (as Kiln Lane Substation will have already been built).

8.8.177 No known rookeries are to be lost. The recorded rookeries are all outside the DOL. The only known marsh harrier territory is at least 100m outside of the DOL.

8.8.178 Removal of habitats during construction is not considered to significantly fragment habitats or dependent species, given the mobility of birds and the limited habitat area being impacted.

8.8.179 The loss of arable farmland during construction will temporarily displace ground-nesting birds, for example skylark and yellow wagtail. Within the DOL, 35 known skylark territories were recorded, along the Proposed Onshore Scheme. It is likely that more skylark territories are present in unsurveyed areas. Construction will be phased such that habitat loss will be temporarily lost in sections along the Proposed Onshore Scheme. Given the wider arable landscape, skylark are likely

to be displaced into adjacent habitat. Sea Link identified six yellow wagtail territories within the proposed Converter Station Site.

8.8.180 Under the Western Route option for the proposed Underground HVDC Cable Corridor, the only habitat loss would constitute temporary loss of cropland, with all other habitats subject to trenchless techniques. Under the Eastern Route option for the proposed Underground HVDC Cable Corridor, no loss of habitats is anticipated, as the cable installation will be within land already cleared for the Sizewell Link Road. Given the lengths of these options in the context of the total Proposed Onshore Scheme, there is not considered to be a difference to the overall significance of the effect, but the impact is greater for the Western Route option.

8.8.181 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features), EM3 (option to co-locate with Sea Link), EM4 (option to co-locate Underground HVDC Cable with Sizewell Link Road) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD10 (reduced cable corridor working widths to avoid sensitive features), BDXX (reduction of vegetation loss for access), BD11 (sectional removal of hedgerows), BD12 (early habitat creation or enhancement), BD20 (reinstatement of linear habitat features) and BD21 (planting of compensatory trees) will ensure that permanent or temporary habitat loss to farmland birds within this feature grouping is avoided and minimised, where possible.

8.8.182 With the abundance of skylark along the Proposed Onshore Scheme, as well as the yellow wagtail territories recorded in the proposed Converter Station Site, the loss of permanent breeding habitat (arable habitat) is likely to impact the favourable conservation status of breeding skylark and yellow wagtail (at the proposed Converter Station Site). This would result in a **Minor adverse** effect which is **significant** at the Local scale. This conclusion applies to both delivery scenarios.

8.8.183 Other farmland species are likely to have their nesting habitat retained, through control measures, noting there may be a temporary loss of foraging habitat (arable fields) during construction. Habitat loss during construction is **unlikely to result in a significant effect** to other farmland bird species, under either Scenario.

Direct mortality and injury

8.8.184 Under the Full Build out of Kiln Lane Scenario, the works to overhead power lines are limited to minor realignments of existing lines. They are therefore not considered to result in a significantly different from baseline collision risk to breeding birds associated with farmland habitats than the existing lines.

8.8.185 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques) and BD3 (avoidance of valuable features through restrictions during vegetation clearance) will ensure that birds are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for breeding farmland birds from direct mortality or injury.

Disturbance

8.8.186 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing) and BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to birds within this feature grouping, is avoided and minimised, where possible.

8.8.187 Construction disturbance is to be avoided to breeding marsh harrier, as a Schedule 1 species of the Wildlife and Countryside Act 1981. Control measure BD14 (compliance with protected species legislation and licensing) similarly ensures that the Principal Contractor would comply with relevant protected species legislation.

8.8.188 As such, there are **unlikely to be significant effects** for breeding farmland birds from disturbance.

Breeding birds associated with woodland habitats

8.8.189 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.15 Baseline Report – Breeding Bird Survey 2024**) have been valued at Local to County importance.

8.8.190 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.191 Under embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features) the vast majority of woodland habitats within the DOL would

not be impacted by construction of the Proposed Onshore Scheme. Woodland losses are restricted to loss of up to 0.4ha of young broadleaved plantation woodland east of Middleton Moor and 0.2ha of plantation woodland (cricket bat willow) and 0.14ha of HPI woodland associated with the River Fromus. Woodland will be reinstated post-construction. Design and location will be included in the LEMP which will form an appendix to the CoCP and reported in the ES.

8.8.192 Lines of trees would also be impacted by construction in a number of locations, which offer supporting value to bird species associated with woodland habitats. Under control measure BD10 (reduced cable corridor working widths to avoid sensitive features) reduced working widths at linear boundary features will typically be reduced to widths of up to 52m for the proposed Underground HVAC Cable Corridor and up to 19.5m for the proposed Underground HVDC Cable Corridor, and will target available gaps between mature trees to minimise losses.

8.8.193 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features), EM3 (option to co-locate with Sea Link), EM4 (option to co-locate Underground HVDC Cable with Sizewell Link Road) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD10 (reduced cable corridor working widths to avoid sensitive features), BDXX (reduction of vegetation loss for access), BD11 (sectional removal of hedgerows), BD12 (early habitat creation or enhancement), BD20 (reinstatement of linear habitat features) and BD21 (planting of compensatory trees) would ensure that permanent or temporary habitat loss to woodland birds within this feature grouping is avoided and minimised, where possible.

8.8.194 Removal of these habitats during construction is not considered to significantly fragment habitats or dependent species, given the limited area impacted and the mobility of birds.

8.8.195 With respect to species of County importance, only one known nightingale territory was recorded within the DOL, outside of designated sites and appropriate buffers. Marsh tit and goshawk both only had one territory recorded, which in both instances were outside of the DOL. Habitat loss during construction is **unlikely to result in a significant effect** to these County importance species, noting the limited habitat loss within the DOL and the low numbers of known territories.

8.8.196 Overall, for other woodland species within this feature grouping, there is considered to be limited habitat loss. Whilst some species may be displaced from potential breeding habitat, there is alternative suitable habitat in the wider landscape both within and outside of the DOL. Whilst there may be some temporary loss of breeding and foraging habitat from construction, the impact is

unlikely to result in a significant effect upon breeding birds associated with woodland habitats.

Direct mortality and injury

8.8.197 Under the Full Build out of Kiln Lane Scenario, the works to overhead power lines are limited to minor realignments of existing lines. They are therefore not considered to result in a materially different from baseline collision risk to birds associated with woodland habitats than the existing lines.

8.8.198 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques) and BD3 (avoidance of valuable features through restrictions during vegetation clearance) will ensure that birds are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for breeding woodland birds from direct mortality or injury.

Disturbance

8.8.199 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing) and BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to birds within this feature grouping, is avoided and minimised, where possible.

8.8.200 Construction disturbance is to be avoided to breeding goshawk, as a Schedule 1 species of the Wildlife and Countryside Act 1981. Control measure BD14 (compliance with protected species legislation and licensing) similarly ensures the Principal Contractor would comply with relevant protected species legislation.

8.8.201 As such, there are **unlikely to be significant effects** to breeding woodland birds from disturbance.

Other breeding birds of conservation concern

8.8.202 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.15 Baseline Report – Breeding Bird Survey 2024**) have been valued at Local importance.

8.8.203 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the

works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.204 House martin and house sparrow were both recorded outside the DOL and associated with buildings. No buildings are proposed to be lost within the DOL.

8.8.205 Cuckoo and mistle thrush were also both recorded outside the DOL and associated with woodland and scrub habitat. There is minimal woodland or scrub habitat lost within the DOL, which would be subsequently reinstated, as described within the previous woodland bird section.

8.8.206 Removal of these habitats during construction is not considered to significantly fragment habitats or dependent species, given the limited area impacted and the mobility of birds.

8.8.207 Overall, given the limited impact to these other species of conservation concern and their supporting habitats, there is **unlikely to be a significant effect** to these other breeding birds of conservation concern from habitat loss.

Direct mortality and injury

8.8.208 Under the Full Build out of Kiln Lane Scenario, the works to overhead power lines are limited to minor realignments of existing lines. They are therefore not considered to result in a significantly different from baseline collision risk to other breeding birds of conservation concern than the existing lines.

8.8.209 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques) and BD3 (avoidance of valuable features through restrictions during vegetation clearance) will ensure that birds are not directly impacted from proposed working practice.

8.8.210 As such, there are **unlikely to be significant effects** for other breeding birds of conservation concern from direct mortality or injury.

Disturbance

8.8.211 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and

licensing) and BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to birds within this feature grouping, is avoided and minimised, where possible.

8.8.212 Construction disturbance is to be avoided to breeding hobby (identified within Laurel Covert by Sea Link), as a Schedule 1 species of the Wildlife and Countryside Act 1981. Control measure BD14 (compliance with protected species legislation and licensing) similarly ensures the Principal Contractor would comply with relevant protected species legislation.

8.8.213 As such, there are **unlikely to be significant effects** for other breeding birds of conservation concern from disturbance.

Wintering birds: inshore and beach habitats (non-designated features)

8.8.214 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.13 Baseline Report – Wintering Bird Survey 2023-2024**) have been valued at Local to County importance.

8.8.215 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.216 All species recorded were at distance to the shore, using inshore marine areas. Nearly all records were more than 500m from the proposed Landfall Site. There is no habitat loss or fragmentation associated with inshore areas as a result of the Proposed Onshore Scheme.

Direct mortality and injury

8.8.217 All species recorded were at distance to the shore, using inshore marine areas. Given the terrestrial nature of the works and the mobility of birds, direct mortality and injury is considered unlikely to occur with the distance to these species in this feature grouping. If these species were to be present closer to the inshore area, the control measures BD8 (pollution prevention measures and sustainable construction drainage design) and BD9 (minimise the risk of frac-out and clean up procedures) will further ensure that injury would be avoided.

8.8.218 As such, there are **unlikely to be significant effects** for wintering birds of inshore and beach habitats from direct mortality or injury.

Disturbance

8.8.219 All species recorded were at distance to the shore, using inshore marine areas. Nearly all records were more than 500m from the Walberswick Landfall Extent. Given the distance to these birds and the terrestrial nature of the works, as well as the control measures BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to

fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing), and BD17 (noise or visual barriers to minimise disturbance impacts), disturbance to birds within this feature grouping would be avoided.

8.8.220 As such, there are **unlikely to be significant effects** for wintering birds of inshore and beach habitats from disturbance.

Other wintering birds (non-designated features)

8.8.221 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.12 Baseline Report – Wintering Bird Survey 2022-2023, Appendix 8.13 Baseline Report – Wintering Bird Survey 2023-2024 & Appendix 8.14 Baseline Report – Wintering Bird Survey 2024-2025**) have been valued at Local to County importance.

8.8.222 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.223 Wintering birds recorded along the Proposed Onshore Scheme within this feature grouping were found predominantly in either arable fields or in wetland associated with Minsmere New Cut. These habitats may be used for foraging and roosting birds.

8.8.224 There will be temporary loss of arable fields during construction of the proposed Underground HVAC and HVDC Cable Corridors. The only permanent losses of arable field habitat will occur for the construction of the Kiln Lane Substation (2.1ha under the Full Build Out Scenario and 0.3ha under the Amendment Scenario), and the proposed Converter Station (8.1 ha). Arable fields were recorded to support black-headed gull, common gull, golden plover and lapwing.

8.8.225 There are no permanent or temporary habitat losses associated with areas with wetland habitats, which have recorded birds within this feature grouping, i.e. Minsmere New Cut.

8.8.226 There are limited impacts to the River Fromus and associated ditch, however these impacts are relatively minor and the habitat in this area is unlikely to support a significant number of wintering birds given the limited area impacted. The majority of these losses are not considered to be permanent given the reinstatement and proposed habitat creation surrounding the access to the proposed Converter Station. Only a small area of permanent loss would result from the footprint of the bridge approach ramps and access track.

8.8.227 Removal of these habitats during construction is not considered to significantly fragment habitats or dependent species, given the limited area impacted and the mobility of birds.

8.8.228 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measure BD1 (limits construction activities during trenchless techniques to avoid valuable features) will ensure that habitat loss to birds within this feature grouping, is avoided and minimised, where possible.

8.8.229 Habitat loss during construction is **unlikely to result in a significant effect** to other wintering birds.

Direct mortality and injury

8.8.230 Under the Full Build out of Kiln Lane Scenario, the works to overhead power lines are limited to minor realignments of existing lines. They are therefore not considered to result in a significantly different from baseline collision risk to other wintering birds than the existing lines.

8.8.231 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques) and BD3 (avoidance of valuable features through restrictions during vegetation clearance) will ensure that birds are not directly impacted from proposed working practice. As such, there are **unlikely to be significant effects** for other wintering birds from direct mortality or injury.

Disturbance

8.8.232 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna), BD8 (pollution prevention measures and sustainable construction drainage design), BD14 (compliance with protected species legislation and licensing) and BD17 (noise or visual barriers to minimise disturbance impacts) will ensure that disturbance to birds within this feature grouping, is avoided and minimised, where possible.

8.8.233 It is anticipated that large flocks of waders in arable fields (lapwing, golden plover) which may be present will be temporarily displaced from the construction area. There is however suitable habitat in the wider landscape to support these species.

8.8.234 As such, there are **unlikely to be significant effects** for other wintering birds from disturbance.

Amphibians (excluding great crested newts)

8.8.235 These ecological features as set out in **Table 8.12** (refer to the Annexes of **Appendix 8.7 Baseline Report – Herpetofauna Survey**) have been valued at Local importance.

8.8.236 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme, on the basis that the works within the vicinity of the feature are the same irrespective of which scenarios/options are taken forward.

Habitat loss and fragmentation

8.8.237 Common and widespread amphibian species are likely to utilise terrestrial habitat within the DOL. Embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features) and EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques) would ensure that the majority of terrestrial habitat and breeding habitat (ponds and ditches) for amphibians is retained and not impacted by construction activities.

8.8.238 Removal of small areas of suitable terrestrial habitat (such as hedgerow and their associated margins) utilised by amphibians and their associated margin within a phased works plan are considered to represent a negligible temporary reduction on the quantity of foraging habitat available to amphibian populations. Upon completion of the works, these terrestrial habitats will be reinstated as detailed within control measures BD11 (sectional removal of hedgerows), BD19 (mitigation, enhancement and compensation planting) and BD20 (reinstatement of linear habitat features).

8.8.239 As such there are **unlikely to be significant effects** through habitat loss or fragmentation to amphibian populations.

Direct mortality/injury and disturbance

8.8.240 Given the retention of the vast majority of habitats within the DOL that are likely to be of value to amphibians with suitable buffers control measure BD2 (protection of valuable features during trenchless techniques) and pollution prevention control measure BD8 (pollution prevention measures and sustainable construction drainage design), there are **unlikely to be significant effects** through direct mortality, injury or disturbance to amphibian populations.

Aquatic fauna associated with the Hundred River

8.8.241 Aquatic fauna associated with the Hundred River at Coldfair Green as set out in **Table 8.12** have been valued at Local importance.

8.8.242 The assessment of the ecological features is affected by the scenarios outlined for the Proposed Onshore Scheme. This feature is only relevant to the Full Build out of Kiln Lane Substation Scenario and the assessment is not affected by the options for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.243 Works associated with the section of the Hundred River at Coldfair Green are limited to modifications to an existing overhead line pylon, including an access off School Road, west of Coldfair Green. No permanent or temporary loss of the Hundred River or its immediate riparian zone is anticipated.

8.8.244 To avoid indirect impacts to retained ecological features, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measure BD2 (protection of valuable features during trenchless techniques). Control measures BD4 (biosecurity practice for aquatic INNS and amphibian protection) and BD18 (biosecurity measures to reduce the spread of INNS) will prevent the spread of INNS to the site to avoid this potential cause of loss or degradation of habitats available to aquatic features.

8.8.245 As such, there are **unlikely to be significant effects** for aquatic features associated with the Hundred River resulting from habitat loss or fragmentation.

Direct mortality and injury

8.8.246 The Hundred River at Coldfair Green is considered to be dry for the majority of the year with limited potential for aquatic fauna to be present. However, no in-channel works for the Hundred River or its immediate riparian zone is anticipated, with suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measure BD2 (protection of valuable features during trenchless techniques). As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats.

8.8.247 As such, there are **unlikely to be significant effects** for aquatic fauna associated with the Hundred River resulting from direct mortality or injury.

Disturbance

8.8.248 The Hundred River at Coldfair Green is considered to be dry for the majority of the year with limited potential for aquatic fauna to be present. However, as per control measure BD6 (lighting restrictions to minimise disturbance to fauna), night work will be avoided as far as practicable, with essential lighting from both construction areas and compounds to be designed, positioned and directed to avoid spill onto watercourses.

8.8.249 Additionally, as per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will manage impacts from construction to aquatic environments through to control noise and vibration.

8.8.250 As such, there are **unlikely to be significant effects** for aquatic features associated with the Hundred River at Coldfair Green resulting from disturbance.

Aquatic fauna associated with the River Fromus

8.8.251 Aquatic fauna associated with the River Fromus as set out in **Table 8.12** have been valued from Local to County importance.

8.8.252 Assessment of the ecological features is not altered by the scenarios or options outlined for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.253 The clear span bridge across the River Fromus (main river), with a height of up to either 6m or 4m (from the ground level at the abutment to the top of the parapet) and 62m long approach ramps (for the 6m option) or 42m long approach ramps (for the 4m option). With either bridge design option, the bridge abutments would be set back 8m from the bank top, and therefore no loss of emergent riparian vegetation or in-channel habitats is anticipated.

8.8.254 Given that the clear span bridge will maintain the River Fromus and immediate riparian corridor, there are **unlikely to be significant effects** for aquatic features resulting from habitat loss or fragmentation to the River Fromus.

8.8.255 Approximately 26m of a wet ditch with marginal and aquatic vegetation west of the River Fromus would be temporarily lost due to a culvert to be installed to facilitate the construction access for the proposed Converter Station. The majority of this length would be reinstated, but the culvert would remain to for the width of the access track, forming the operational access to the proposed Converter Station Site, resulting in a small section of permanent loss.

8.8.256 Given the primarily temporary nature and highly restricted scale of permanent habitat loss for aquatic features in the wet ditch, impacts are considered **unlikely to result in a significant effect** on associated aquatic fauna.

8.8.257 Control measures BD4 (biosecurity practice for aquatic INNS and amphibian protection) and BD18 (biosecurity measures to reduce the spread of INNS) will prevent the spread of INNS to the site to avoid this potential cause of loss or degradation of habitats available to aquatic features.

8.8.258 Given that the clear span bridge will maintain the River Fromus and immediate riparian corridor, and the ditch extends for only a short length upstream of the section culverted, there are **unlikely to be significant effects** for aquatic fauna resulting from fragmentation.

Direct mortality and injury

8.8.259 In-channel works would be limited to the section of wet ditch associated with the River Fromus, which is considered unlikely to support a notable fish assemblage.

8.8.260 As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats.

8.8.261 As such, there are **unlikely to be significant effects** for aquatic fauna resulting from direct mortality and injury.

Disturbance

8.8.262 As per control measure BD6 (lighting restrictions to minimise disturbance to fauna), night work will be avoided as far as practicable, with essential lighting from both construction areas and compounds to be designed, positioned and directed to avoid spill onto watercourses.

8.8.263 As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will manage impacts from construction to aquatic environments through measures to control noise and vibration. Further design development is required in relation to the construction of the bridge and exact methods and positioning of piling. It is anticipated that piling works will be at least 8m from the bank edge. The piling will be of short duration and designed to use less impactful methods to minimise the magnitude of impact resulting from vibration. As such, there are **unlikely to be significant effects** for aquatic fauna resulting from disturbance.

Aquatic fauna associated with the Minsmere Old River

8.8.264 Aquatic fauna associated with the Minsmere Old River as set out in **Table 8.12** have been valued from Local to Regional importance.

8.8.265 Assessment of the ecological features is not altered by the scenarios or options outlined for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.266 No direct habitat loss of the Minsmere Old River or associated riparian corridor will occur as a result of construction, with trenchless methods (including suitable buffers) for cabling to be employed.

8.8.267 To avoid indirect impacts to retained ecological features, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques).

8.8.268 Control measures BD4 (biosecurity practice for aquatic INNS and amphibian protection) and BD18 (biosecurity measures to reduce the spread of INNS) will prevent the spread of INNS to avoid this potential cause of loss or degradation of habitats available to aquatic features.

8.8.269 As such, there are **unlikely to be significant effects** for aquatic fauna resulting from habitat loss or fragmentation.

Direct mortality and injury

8.8.270 No in-channel works will take place within the Minsmere Old River or the associated riparian corridor.

8.8.271 As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats. This includes the development of suitable clean-up measures should the unlikely event of a frac-out occur; control measure BD9 (minimise the risk of frac-out and clean up procedures).

8.8.272 As such, there are **unlikely to be significant effects** for aquatic fauna resulting from direct mortality or injury.

Disturbance

8.8.273 Construction works are proposed over 200m from the watercourse at the nearest point, with the watercourse generally within a wooded corridor. Therefore, disturbance impacts resulting from construction phase lighting are unlikely. Furthermore, as per control measure BD6 (lighting restrictions to minimise disturbance to fauna), if night work is required, lighting would be designed, positioned and directed to avoid spill onto watercourses.

8.8.274 The watercourse will be crossed by trenchless techniques, the installation of which may cause vibration which could impact aquatic features, particularly fish. As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will manage impacts from construction to aquatic environments through measures to control noise and vibration. Further design development is required in relation to trenchless crossing, with ground investigation works required to inform the suitable depth for installation, with greater depths likely to have a reduced impact as the vibration dissipates through the ground before reaching the watercourse.

8.8.275 The trenchless installation of the proposed Underground Cable will be of short duration and works will be designed to minimise the potential impacts of vibration. As such, there are **unlikely to be significant effects** for aquatic fauna resulting from disturbance.

Aquatic fauna associated with the tidal Dunwich River

8.8.276 Aquatic fauna associated with the tidal Dunwich River as set out in **Table 8.12** have been valued from Local to County importance.

8.8.277 Assessment of the ecological features is not altered by the scenarios or options outlined for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.278 No direct habitat loss of the tidal Dunwich River or associated riparian corridor will occur as a result of construction, with trenchless methods (including suitable buffers) for cabling to be employed.

8.8.279 To avoid indirect impacts to retained ecological features, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques).

8.8.280 Control measures BD4 (biosecurity practice for aquatic INNS and amphibian protection) and BD18 (biosecurity measures to reduce the spread of INNS) will prevent the spread of INNS to avoid this potential cause of loss or degradation of habitats available to aquatic features.

8.8.281 As such, there are **unlikely to be significant effects** for aquatic fauna resulting from habitat loss or fragmentation.

Direct mortality and injury

8.8.282 No in-channel works will take place within the tidal Dunwich River or associated riparian corridor.

8.8.283 As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats. This includes the development of suitable clean-up measures should the unlikely event of a frac-out occur; control measure BD9 (minimise the risk of frac-out and clean up procedures).

8.8.284 As such, there are **unlikely to be significant effects** for aquatic features resulting from direct mortality or injury.

Disturbance

8.8.285 Construction works are proposed over 150m from the watercourse at the nearest point, with the watercourse generally screened by dense reedbeds. Therefore, disturbance impacts resulting from construction phase lighting are unlikely. Furthermore, as per control measure BD6 (lighting restrictions to minimise disturbance to fauna), if night work is required, lighting would be designed, positioned and directed to avoid spill onto watercourses.

8.8.286 The watercourse will be crossed by trenchless techniques, the installation of which may cause vibration which could impact aquatic features, particularly fish. As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will manage impacts from construction to aquatic environments through measures to control noise and vibration. Further design development is required in relation to trenchless crossing, with ground investigation works required to inform the suitable depth for installation, with greater depths likely to have a reduced impact as the vibration dissipates through the ground before reaching the watercourse.

8.8.287 The trenchless installation of the proposed Underground Cable will be of short duration and works will be designed to minimise the potential impacts of

vibration. As such, there are **unlikely to be significant effects** for aquatic fauna resulting from disturbance.

Aquatic fauna associated with minor watercourses

8.8.288 Aquatic fauna associated with minor watercourses as set out in **Table 8.12** have been valued at Local importance.

8.8.289 Assessment of the ecological features is not altered by the scenarios or options outlined for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.290 Habitat loss relevant to the aquatic fauna associated with minor watercourses is limited, as described for the related habitat feature grouping of 'minor watercourses' within **Section 8.8** of this chapter.

8.8.291 Control measures BD4 (biosecurity practice for aquatic INNS and amphibian protection) and BD18 (biosecurity measures to reduce the spread of INNS) will prevent the spread of INNS to avoid this potential cause of loss or degradation of habitats available to aquatic features.

8.8.292 Given the temporary nature and restricted scale of habitat loss associated with each watercourse in combination with control measures, there are **unlikely to be significant effects** for the fauna of minor watercourses from permanent or temporary loss of habitats.

Direct mortality and injury

8.8.293 The minor watercourses are considered to be dry for the majority of the year with limited potential for notable aquatic fauna to be present. As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats.

8.8.294 As such, there are **unlikely to be significant effects** for aquatic fauna associated with the minor watercourses resulting from direct mortality and injury.

Disturbance

8.8.295 Under control measure BD6 (lighting restrictions to minimise disturbance to fauna), night work will be avoided as far as practicable, with essential lighting from both construction areas and compounds to be designed, positioned and directed to avoid spill onto watercourses.

8.8.296 The majority of the minor watercourses will be crossed by trenchless techniques, the installation of which may cause vibration which could impact aquatic fauna, particularly fish. However, as the watercourses are dry for the majority of the year, notable fish species are not considered likely to be present. As such, there are **unlikely to be significant effects** for aquatic fauna associated with the remaining watercourses resulting from disturbance.

Otter and water vole associated with the Hundred River

8.8.297 Otter and water vole associated with the Hundred River as set out in **Table 8.12** have been valued at County importance.

8.8.298 The assessment of the ecological features is affected by the scenarios outlined for the Proposed Onshore Scheme. This feature is only relevant to the Full Build out of Kiln Lane Substation Scenario and the assessment is not affected by the options for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.299 Within the Full Build Out of Kiln Lane Substation Scenario, works associated with the section of the Hundred River at Coldfair Green are limited to modifications to an existing overhead line pylon, including an access off School Road, west of Coldfair Green. No permanent or temporary loss of the Hundred River or its immediate riparian zone is anticipated. To avoid indirect impacts to habitat utilised by otter or water vole, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measure BD2 (protection of valuable features during trenchless techniques).

8.8.300 As such, there are **unlikely to be significant effects** for the otter and water vole associated with the Hundred River resulting from habitat loss or fragmentation.

Direct mortality, injury and disturbance

8.8.301 No in-channel works for the Hundred River or its immediate riparian zone are anticipated, with suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measure BD2 (protection of valuable features during trenchless techniques).

8.8.302 Control measure BD8 (pollution prevention measures and sustainable construction drainage design) will ensure the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats which are utilised by otter and water vole, as well as controlling noise and vibration. Night work will be avoided as far as practicable (control measure BD6 (lighting restrictions to minimise disturbance to fauna)), with essential lighting from both construction areas and compounds to be designed, positioned and directed to avoid spill onto watercourses.

8.8.303 Consequently, there are **unlikely to be significant effects** for otter and water vole associated with the Hundred River resulting from direct mortality, injury and disturbance.

Otter and water vole associated with the River Fromus

8.8.304 Otter and water vole associated with the River Fromus as set out in **Table 8.12** have been valued at County importance.

8.8.305 Assessment of the ecological features is not altered by the scenarios or options outlined for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.306 Whilst the clear span bridge will be constructed across the River Fromus, the bridge abutments would be set back 8m from the bank top, and therefore no loss of emergent riparian vegetation or in-channel habitats from the main river is anticipated. Consequently, the bridge over the River Fromus is considered **unlikely to result in significant effects** for otter or water vole resulting from habitat loss or fragmentation.

8.8.307 Approximately 20m of a wet ditch with marginal and aquatic vegetation west of the River Fromus would be lost due to a culvert to be installed to facilitate the construction access for the proposed Converter Station. This wet ditch offers suitable habitat for water vole but is of negligible value for otters. Part of this culverted length would be reinstated, but the culvert would remain for the width of the access track, forming the operational access to the proposed Converter Station Site, resulting in a small section of permanent loss of wet ditch utilised by water voles.

8.8.308 Whilst the permanent length of loss of water vole habitat is restricted in scale, there is limited suitable habitat with direct connectivity, with the majority of the River Fromus channel itself being heavily shaded with limited macrophyte growth. Therefore, the permanent loss of habitat, and the fragmentation caused by the culverting, would constitute an impact to the favourable conservation status of water vole that would result in a **Minor adverse effect** which is **significant** at the Local scale.

Direct mortality, injury and disturbance

8.8.309 In-channel works would be limited to the section of wet ditch associated with the River Fromus, should water vole be present within this area they will be sensitively displaced as per control measures BD3 (avoidance of valuable features through restrictions during vegetation clearance) and BD14 (compliance with protected species legislation and licensing).

8.8.310 As per control measure BD8 (pollution prevention measures and sustainable construction drainage design), the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats. The control measure BD8 (pollution prevention measures and sustainable construction drainage design), will ensure the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats, as well as controlling noise and vibration. Night work will be avoided as far as practicable (control measure BD6 (lighting restrictions to minimise disturbance to fauna)), with essential lighting from both construction areas and compounds to be designed, positioned and directed to avoid spill onto watercourses.

8.8.311 Consequently, there are **unlikely to be significant effects** for otter and water vole associated with the River Fromus resulting from direct mortality, injury or disturbance.

Water vole associated with the Minsmere Old River

8.8.312 These ecological features as set out in **Table 8.12** have been valued at County importance.

8.8.313 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.314 The water vole population associated with the Minsmere Old River Floodplain is located within the DOL. No direct habitat loss of the Minsmere Old River or associated floodplain will occur as a result of construction, with trenchless methods (including suitable buffers) for cabling to be employed.

8.8.315 Suitable buffers will be established as per control measure BD2 (protection of valuable features during trenchless techniques), this will ensure there are no losses of habitat which water vole may utilise. To avoid indirect impacts to retained ecological features, suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features) and BD2 (protection of valuable features during trenchless techniques).

8.8.316 As such, there are **unlikely to be significant effects** for the water vole population associated with the Minsmere Old River Floodplain resulting from habitat loss or fragmentation.

Direct mortality, injury and disturbance

8.8.317 No in-channel works for the Minsmere Old River Floodplain are anticipated, and suitable fencing will be installed to implement buffer zones and areas of no deviation, as per control measure BD2 (protection of valuable features during trenchless techniques).

8.8.318 The control measure BD8 (pollution prevention measures and sustainable construction drainage design), will ensure the contractor will employ pollution prevention methods to avoid pollution of aquatic habitats, as well as controlling noise and vibration. Night work will be avoided as far as practicable (control measure BD6 (lighting restrictions to minimise disturbance to fauna)), with essential lighting from both construction areas and compounds to be designed, positioned and directed to avoid spill onto watercourses.

8.8.319 Consequently, there are **unlikely to be significant effects** for water vole associated with the Minsmere Old River resulting from direct mortality, injury and disturbance.

Other priority species

8.8.320 These ecological features as set out in **Table 8.12** have been valued at Local importance.

8.8.321 The assessment of the ecological feature grouping is not altered by the scenarios or options for the Proposed Onshore Scheme.

Habitat loss and fragmentation

8.8.322 During construction of the Proposed Onshore Scheme, the loss of habitat utilised by other protected and/or notable fauna is generally limited to the temporary loss of arable habitat, hedgerows and lines of trees associated with field boundaries.

8.8.323 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD10 (reduced cable corridor working widths to avoid sensitive features), BD11 (sectional removal of hedgerows), BD20 (reinstatement of linear habitat features) and BD21 (planting of compensatory trees) will ensure that permanent or temporary habitat loss to terrestrial habitats utilised by this feature grouping is avoided and minimised, where possible. The temporary removal of these habitats during construction is not considered to fragment habitats utilised by other protected and/or notable fauna.

8.8.324 As such, there are **unlikely to be significant effects** for other priority species resulting from habitat loss or fragmentation.

Direct mortality, injury and disturbance

8.8.325 The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD4 (biosecurity practice for aquatic INNS and amphibian protection), BD5 (measures to exclude or protect fauna), BD6 (lighting restrictions to minimise disturbance to fauna), BD7 (timing of works to avoid disturbance to fauna) and BD8 (pollution prevention measures and sustainable construction drainage design) will ensure that other protected and/or notable fauna are not directly impacted from proposed working practice.

8.8.326 As such, there are **unlikely to be significant effects** for other priority species resulting from direct mortality, injury and disturbance.

Operation

8.8.327 Potential likely significant effects within the scope of this assessment for the operation of the Proposed Onshore Scheme comprise those arising from disturbance or direct mortality/injury to protected or notable species, including those for which statutory and non-statutory sites are designated.

Terrestrial protected and/or notable species

Disturbance or direct mortality/injury

8.8.328 As outlined in **Chapter 2 Description of the Proposed Scheme**, operational activities will primarily revolve around periodic monitoring and maintenance of each element of the Proposed Onshore Scheme, occasional repair works, and daily staffed operational activities associated with the proposed Converter Station.

8.8.329 Maintenance activities related to the proposed Underground HVAC and HVDC Cables would involve cable route inspections from locations where the route is close to or intersects the existing road network, and/or non-intrusive surveys (such as drone surveys) scheduled at monthly intervals to monitor the easements and potential third party activities that could impact on the buried cables.

8.8.330 It is anticipated that monitoring activities will be generally limited to small numbers of individuals undertaking non-intrusive works and using established access routes which are subject to existing agricultural usage. However, in the very unlikely event that an underground cable fault occurs (i.e. a cable strike), cable repairs may be required. The activities involved would be similar to installation, typically limited to the location of the repair. Depending on the severity of the fault, repairs could range from use of specialised sheath repair similar in nature to a joint bay unit, to full replacement of the cable section between joint bays.

8.8.331 Impacts could therefore occur to the same terrestrial protected and/or notable species where disturbance or direct mortality/injury impact pathways were present at the construction phase resulting from proposed Underground Cable installation works.

8.8.332 As repair methods would utilise the similar methods as construction, albeit on a more localised scale, disturbance or direct mortality/injury impacts resulting from repair works during operation and maintenance would be managed through the same embedded mitigation and control measures. The embedded mitigation measures EM1 (introduction of trenchless techniques to avoid sensitive ecological features), EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD5 (measures to exclude or protect fauna) would ensure that terrestrial protected and notable species are not directly impacted from proposed working practice, with control measures BD8 (pollution prevention measures and sustainable construction drainage design) and BD17 (noise or visual barriers to minimise disturbance impacts) mitigating the potential for noise or visual disturbance.

8.8.333 Consequently, due to the embedded design and control measures during the operational phase, disturbance or direct mortality/injury impacts from periodic monitoring or repair works are considered **unlikely to result in significant effects** upon terrestrial protected and/or notable species.

8.8.334 The control measures BD6 (lighting restrictions to minimise disturbance to fauna) and BD8 (pollution prevention measures and sustainable construction drainage design) restrict the level and type of construction activity taking place during the night, limiting disturbance to nocturnal species. All relevant protected species legislation would be complied with as per control measure BD14 (compliance with protected species legislation and licensing).

8.8.335 Whilst the proposed Converter Station would have external lighting installed on the perimeter for safety and security purposes and to facilitate maintenance or repair works during the hours of darkness or low light, the proposed Converter Station would not normally be lit. Potential disturbance resulting from lighting to nocturnal receptors utilising habitats surrounding the proposed Converter Station would therefore be infrequent, localised and/or of short duration.

8.8.336 The operational lighting requirements described for the Full Build Out of Kiln Lane Substation scenario include permanent lighting which will maintain an average illuminance of 6.0 lux, with a maintained minimum point illuminance of 2.5 lux. Without mitigation, operational light spill may disturb barbastelle bats (Annex II species) using the existing and proposed habitats in proximity to Kiln Lane Substation for foraging or commuting. Illumination of bat foraging and commuting habitat adjacent to Kiln Lane Substation (including proposed mitigation planting) would have a permanent impact to the favourable conservation status of barbastelle bat that would result in a **Minor adverse** effect which is **significant** at the Local scale.

Aquatic protected and/or notable species

Disturbance

8.8.337 The Proposed Scheme received consultation feedback from the Environment Agency in September 2024 regarding the potential for Electro-Magnetic Fields (EMF) associated with electric cables crossing watercourses to disturb fish. Research suggests that there is potential for EMFs to impact on fish behaviour and that EMF may also impact the development of fish eggs and juvenile fish. Therefore, fish within the following ecological feature groupings (described in **Table 8.12**) could potentially be impacted by disturbance by EMF during the operational phase:

a. Aquatic features associated with the River Fromus tributary (Local importance)
b. Aquatic features associated with the Minsmere Old River (Local to Regional importance)
c. Aquatic features associated with the tidal Dunwich River (Local to County importance)

d. Remaining aquatic features (Local importance)

8.8.338 An EMF Assessment (**see Appendix 2.5 Electromagnetic Field Assessment** of the PEIR) has been undertaken and considers the potential for onshore EMF effects at watercourse crossings, where proposed Underground Cables will be buried under the watercourse. The proposed Underground HVDC and HVAC Cables will cross a number of rivers using primarily trenchless techniques, though with potential for the River Fromus Tributary to be open-cut under the Southern Route option for the proposed Underground HVAC Cable. The proposed Underground Cables will cross the watercourses perpendicularly and be installed at a minimum depth of 5m below the riverbed using HDD. The two proposed Underground HVDC Cables and metallic return will be installed 5m apart with the metallic return located centrally. The watercourse depths and widths vary, with a number being dry for the majority of the year and the maximum river depth being in the order of 2m at the tidal Dunwich River.

8.8.339 For those watercourses which are dry for the majority of the year, fish are not anticipated to be present and therefore no impacts resulting from EMF are anticipated and there are **unlikely to be significant effects**.

8.8.340 Within the EMF assessment, calculations of the magnetic fields have been performed at the riverbed, 0.2m, 0.5m, 1m and 2m beneath. The maximum magnetic field (at riverbed during normal operation) is estimated to be 76.2 μT. This field strength is reduced to this level due to the minimum depth (5m) that the proposed Underground Cable would be buried at, with the optimal depth and substrate to be informed by ongoing Ground Investigation. Following a literature review to inform this PEIR, the effect on migratory fish (European eel are the only migratory fish likely to be within the watercourse crossed by the proposed Underground Cable Corridor) is considered unlikely to be significant. Whilst current understanding suggests that European eel can detect magnetic fields in the order of micro-Tesla, there is no evidence to suggest such magnetic field would act as a barrier to upstream or downstream migration and the low-level EMF is considered unlikely to be biological and ecologically significant.

8.8.341 With regards EMF effects on the development of fish eggs and juvenile fish, further assessment of fish habitat will be completed in advance of the ES to determine whether notable habitats (for example spawning) for notable fish species exist within the proposed Underground Cable Corridor, but based on current understanding such habitats are likely to be absent from the watercourses crossed by the proposed Underground Cable Corridor.

8.8.342 A detailed assessment covering the potential impact on migratory fish will be discussed in future EA technical consultation and completed as part of the ES. However, based on current preliminary assessment it is considered that EMFs are considered **unlikely give rise to a significant effect**.

Decommissioning

8.8.343 As outlined in **Chapter 2 Description of the Proposed Scheme**, the condition of component parts of the Proposed Onshore Scheme would be reviewed to determine their viability beyond their minimum lifespan or potential for replacement/maintenance for continued operation. Should decommissioning of component parts be required, the specific methods of decommissioning are likely to evolve over time and utilise good industry practice and taking account of relevant obligations to landowners under the relevant land agreements, the environmental baseline at the time, and would comply with all relevant statutory requirements applicable at the time.

8.8.344 Impacts could therefore occur to the same ecological features (protected and/or notable sites, habitats and species) where impact pathways were present at the construction phase.

8.8.345 As decommissioning methods would utilise similar methods as construction, albeit on a more localised scale, impacts resulting from decommissioning works would be managed through the same embedded mitigation and control measures or better. The embedded mitigation measure EM2 (micro-siting and routing to avoid sensitive features) and control measures BD1 (limits construction activities during trenchless techniques to avoid valuable features), BD2 (protection of valuable features during trenchless techniques), BD3 (avoidance of valuable features through restrictions during vegetation clearance), BD4 ('clean, check, dry' biosecurity practice), BD5 (measures to exclude or protect fauna) would ensure that terrestrial protected and notable habitats and species are not directly impacted from proposed working practice, with control measures BD8 (pollution prevention measures and sustainable construction drainage design) and BD17 (noise or visual barriers to minimise disturbance impacts) mitigating the potential for noise or visual disturbance.

8.8.346 The control measures BD6 (lighting restrictions to minimise disturbance to fauna) and BD8 (pollution prevention measures and sustainable construction drainage design) restrict the level and type of construction activity taking place during the night, limiting disturbance to nocturnal species. All relevant protected species legislation will be complied with as per control measure BD14 (compliance with protected species legislation and licensing).

8.8.347 Consequently, due to the embedded design and control measures during the decommissioning phase, impacts are not anticipated to be greater in magnitude than those identified at the construction phase and are **unlikely to result in significant effects**.

8.9 Mitigation, monitoring and enhancement

8.9.1 Mitigation measures are defined in **Chapter 5 EIA Approach and Methodology** of this PEIR, with embedded mitigation and control measures for Ecology and Biodiversity being presented in **Section 8.7** of this chapter.

Additional mitigation and enhancement

Mitigation

Other ancient and veteran trees

8.9.2 Works within the RPA and/or crown management of veteran trees may be required where these occur adjacent to existing roads or tracks to be used for construction accesses. Bespoke tree management and protection measures will be developed for each veteran tree following detailed arboricultural surveys and advice. These will consider factors including timing of works, species-specific responses to cutting and period since last pruning works, to develop tree management methods that would not result in deterioration of the health of the tree and would aim to prolong the life of the tree. Furthermore, methods will be developed to mitigate the risk to tree roots from direct damage and soil compaction during construction. Such measures could include ground protection measures and/or specification of pedestrian/light vehicle access only in certain locations. These measures will be included within an Arboricultural Impact Assessment and Tree Protection Plan to be provided as an appendix to the ES.

8.9.3 As a result, the significant effect on other ancient and veteran trees from construction of the Proposed Onshore Scheme will be reduced to a non-significant level.

Bats (Annex II species) and bats (non-Annex II species) categorised as widespread

8.9.4 The loss of approximately 330m of hedgerow at Kiln Lane Substation would result in significant effects upon the favourable conservation status of barbastelle bats and upon widespread non-Annex II bat species, through loss of foraging and commuting habitat. Replacement hedgerow and tree planting will be provided as part of the landscape plan for Kiln Lane Substation at the boundaries of the site, to provide foraging habitat and to reinstate east to west linear habitat connectivity for bats between woodland resources outside of the DOL. As a result, the significant effects on these bat species from construction of the Proposed Onshore Scheme will be reduced to a non-significant level.

8.9.5 The loss of up to approximately 200m of hedgerow with mature trees immediately to the east of the proposed Converter Station Site represents a significant effect upon widespread non-Annex II bat species, through loss of foraging and commuting habitat. Replacement hedgerow and tree planting will be provided as part of the landscape plan for the proposed Converter Station, to provide foraging habitat and to reinstate north to south linear habitat connectivity for bats across the proposed Converter Station Site. As a result, the significant effect on widespread non-Annex II bat species from construction of the Proposed Onshore Scheme will be reduced to a non-significant level.

8.9.6 To mitigate the likely significant operational effect upon new planting at Kiln Lane Substation and existing adjacent woodland, a sensitive lighting strategy will be

produced to detail how dark conditions will be maintained for bat foraging and commuting. Implementation of the sensitive lighting strategy will reduce the significant effect on barbastelle commuting and foraging from operation of the Proposed Onshore Scheme to a non-significant level.

Breeding birds associated with farmland habitats

8.9.7 The permanent loss of available breeding habitat for skylark and yellow wagtail would result from the construction of the proposed Converter Station, Kiln Lane Substation and the associated landscape planting (likely to comprise primarily woodland which would preclude skylark and yellow wagtail nesting).

8.9.8 Mitigation of the permanent loss would be delivered in proximity to each of these losses, including conversion of an approximately 6.8ha arable field adjacent to the proposed Converter Station into an area of permanent grassland. As the primary function of this area would be to function as skylark and yellow wagtail mitigation, its composition, structure and subsequent management would be designed to optimise suitability for skylark and yellow wagtail, and offer a less transient resource than the surrounding arable land. However, as this field is to be utilised as a compound for the construction of the proposed Converter Station, the land will be unavailable for use by skylark and yellow wagtail throughout the construction period.

8.9.9 A second area of skylark and yellow wagtail mitigation will be available throughout the construction period to facilitate early mitigation as per control measure BD12 (early habitat creation or enhancement). This area is positioned between the River Fromus and Bloomfields Covert. This is a currently arable field, so again the carrying capacity for skylark and yellow wagtail could be increased, either utilising skylark plots in order to increase available foraging resource for birds within the wider area, or again conversion to a more permanent grassland or more preferable arable field type, for example spring cereals (or a combination of habitats).

8.9.10 As a result, the significant effect on breeding birds associated with farmland habitats from construction of the Proposed Onshore Scheme will be reduced to a non-significant level.

Water vole associated with the River Fromus

8.9.11 The culverting of the wet ditch associated with the River Fromus to form the operational access to the proposed Converter Station would result in the permanent loss of water vole habitat, and would fragment a short northern section of the ditch.

8.9.12 To address the fragmentation impact, the culvert would be fitted with a mammal ledge of suitable specification for water vole.

8.9.13 The area between the ditch and the River Fromus will be utilised for habitat creation for mitigation purposes. Whilst the majority of this area will comprise woodland, likely to be wet woodland given the position of the floodplain, sections

of open, unshaded aquatic habitat will be created, suitable for water vole. This may comprise either wet ditches, potentially connecting into the ditch and/or the River Fromus, or ponds. Similarly, there is the potential for further creation of such features on the relatively unshaded areas east of the River Fromus.

8.9.14 Proposed aquatic features created would be designed to provide both suitable burrowing and foraging habitat for water vole, with areas of steeped banks and emergent channel and marginal vegetation. As per control measure BD19 (mitigation, enhancement and compensation planting), planting of aquatic vegetation will incorporate species of local provenance, or utilise natural colonisation from connected habitats.

8.9.15 Mitigation creation would take place early within the construction programme as per control measure BD12 (early habitat creation or enhancement).

Compensation

Mature trees

8.9.16 Whilst the number of mature trees lost will be minimised through embedded control measures, at the preliminary assessment stage there is potential that mature trees will be permanently lost from several ecological features/feature groupings:

a. Habitats within and surrounding Harris's Belt and Pit
b. Habitats between Moat Road and Pretty Road
c. Other hedgerows and tree lines

8.9.17 Compensation for the loss of these features would take the form of planting of trees of the same or similar species as those lost in each location, and take place early within the construction programme as per control measure BD12 (early habitat creation or enhancement).

8.9.18 In general, compensation planting for loss of mature trees from linear features would take place within the same linear feature, as per control measure BD21 (planting of compensatory trees). Additional compensation planting of trees will take place within other linear features within the DOL, either within existing linear features such as hedgerows, or within new linear features where feasible. The locations for planting of new hedgerows with trees and tree lines include within the substantial areas of landscaping surrounding the proposed Converter Station, Kiln Lane Substation, and permanent access across the River Fromus.

8.9.19 As per control measure BD19 (mitigation, enhancement and compensation planting), planting of trees in the wider landscape will incorporate species of local provenance, or which are local priorities for nature conservation, such as native black poplar (*Populus nigra* subsp. *betulifolia*). This may include the potential use of translocated trees or salvaged woody material.

River Fromus and associated habitats

8.9.20 Compensation for the loss of HPI woodland habitat from the River Fromus riparian corridor would be achieved through the creation of new areas of semi-natural woodland on the western bank, effectively replacing the large area currently occupied by cricket bat willow plantation monoculture (approximately 3.8ha). Given it is a crop, it is likely that the plantation could be harvested in the near future. Part of this area of extensive semi-natural woodland creation would represent compensation for HPI woodland loss, with the remainder providing ecological enhancement.

8.9.21 Woodland creation in this area would help to buffer, extend and link the existing small blocks of HPI woodland on the eastern bank. The woodland created here would be similar in species composition to the woodland being impacted, with further detailed botanical survey required to inform this design. The presence of existing HPI woodland on the eastern bank gives potential to establish new woodland through natural succession, potentially in combination with suitable planting of local provenance as per control measure BD19 (mitigation, enhancement and compensation planting).

Monitoring

8.9.22 Appropriate monitoring measures for ecological mitigation, compensation, and enhancement measures will be outlined in the LEMP which will form an appendix to the CoCP. The monitoring period, frequency and suitable methods for each ecological feature will be designed to ensure that the results are robust and can appropriately inform remedial measures necessary, also to be defined within the LEMP. The LEMP will include the Habitat Management and Monitoring Plan required to define the 30-year minimum management and monitoring regime for BNG purposes.

Enhancement

8.9.23 Opportunities to incorporate environmental enhancements have been identified through the design development process to date. The following enhancements form part of the Proposed Onshore Scheme.

8.9.24 Opportunities will be sought to deliver environmental enhancements, on a temporary basis, during construction and within the DOL, where agricultural land is taken out of production.

Habitats

8.9.25 As described above, mitigation and compensation habitat creation and enhancement for impacts to habitats and species will be undertaken within several key areas, particularly along the River Fromus, at the proposed Converter Station Site and at Kiln Lane Substation. It is likely that habitat creation within these areas will exceed appropriate requirements for mitigation and compensation and will also deliver ecological enhancement.

8.9.26 The riparian corridor of the River Fromus at the point of crossing will include large areas of primarily woodland creation on the western bank, to replace the cricket bat willow monoculture. This woodland will be designed to functionally extend and connect the smaller semi-natural fragments on the eastern bank. Given the position on the floodplain, this is anticipated to form at least partial areas of wet woodland, and will incorporate open water features as part of the water vole mitigation. On the eastern bank, the neutral grassland is likely to be enhanced through a more sympathetic cutting regime to reduce the dominance of coarser grasses and facilitate greater botanical diversity. There also remains opportunity for hedgerow creation and tree planting to demarcate and buffer these areas from the adjacent arable land.

8.9.27 Surrounding the proposed Converter Station, significant areas of primarily woodland planting will be established on arable land as landscape screening of the above ground infrastructure. The woodland planting will enhance connectivity between surrounding existing woodlands such as Bloomfields Covert, Coltsclose Pickle, Harris's Belt and Pit, and the block at the junction of the B1119 and Fristonmoor Lane. Woodland creation and management will aim for composition and structure similar to existing high quality local woodlands. Further design development of the landscape masterplan will be undertaken for habitat creation surrounding the proposed Converter Station, potentially to incorporate other habitats such as large grassland rides, scrub and ponds. Hedgerows are also likely to be incorporated to increase linkages between areas of habitat creation and around linear features, such as along the currently bare B1119.

8.9.28 Under The Full Build Out of Kiln Lane Substation, substantial areas of primarily woodland planting will be established on arable land as landscape screening of the permanent infrastructure, with linkages to wider landscape features provided through hedgerows or treelines. The principles and features of habitats creation surrounding the Kiln Lane Substation will follow those outlined for the proposed Converter Station.

Bats

8.9.29 Whilst some of the planting around the proposed Converter Station and Kiln Lane Substation would form mitigation for loss of foraging and commuting habitat for bats, the majority of habitat creation areas described above would act as enhancement for bats through large increases in foraging and commuting resource.

8.9.30 In addition to the extensive habitat creation around areas of above ground infrastructure, opportunities to enhance two bat commuting corridors in key locations have been identified.

8.9.31 The hedgerows and tree lines located along Butcher's Lane, to the west of the B1125 (Dunwich Road), display multiple large gaps, and currently provide somewhat limited connectivity between Big Wood (ancient woodland) and Dunwich Forest. Enhancement through hedgerow creation and planting of tree

lines along this corridor will enhance ecological connectivity for bats and other species between these features and the wider local landscape.

8.9.32 The roadside hedgerows situated along Lodge Road to the west of Walberswick and linking to Hoist Covert currently vary in density and vertical structure. The western extent of the hedgerows connecting directly to Hoist Covert are thin with occasional gaps. Enhancement through hedgerow creation and infilling of tree lines along this corridor will improve the ecological connectivity for bats which frequently use these features as important flight lines to commute between existing maternity roosts in Walberswick, Hoist Covert, and the wider landscape.

Biodiversity Net Gain

8.9.33 A full BNG assessment will be provided as an appendix to the ES, and will follow industry good practice methodologies comprising:

a. Biodiversity Net Gain: Good Practice Principles for Development (CIRIA, 2019) (Ref 39).
b. Statutory Biodiversity metric (Defra, 2024c) (or the most recent version at the time of assessment) (Ref 40).

8.9.34 For the PEIR, the Statutory Biodiversity metric has been utilised to undertake a high-level calculation of the baseline biodiversity value, the indicative post-development biodiversity value and the indicative net change in biodiversity value for the Proposed Onshore Scheme.

8.9.35 The Applicant is committed to delivering BNG for the onshore elements as previously highlighted during scoping. It is anticipated that BNG delivery will become mandatory under the Environment Act 2021 (which requires a 10% increase from the baseline) for DCO applications from May 2026 (Ref 41) UKHab surveys and BNG unit calculations are ongoing following a staged approach to assessment in order to inform the design and discussions on ecological compensation in line with the Biodiversity Gain Hierarchy. A Government consultation on BNG and NSIPs is currently underway. Therefore, the approach to BNG assessment and delivery will be kept under review and the final BNG approach for the Proposed Onshore Scheme will be revised in line with the latest guidance.

8.9.36 The approach to BNG for the early design stages of the Proposed Onshore Scheme have focussed on the on top two priorities under Biodiversity Gain Hierarchy:

a. Apply the Mitigation Hierarchy - do everything possible to first avoid and then minimise impacts on biodiversity.
b. Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.

8.9.37 This approach has been incorporated into the design and embedded mitigation measures, with EM1 (introduction of trenchless techniques to avoid sensitive

ecological features) and EM2 (micro-siting and routing to avoid sensitive features) introducing trenchless techniques and micro-siting to minimise impacts to biodiversity.

8.9.38 The BNG assessment also requires consideration of adherence to the Good Practice Principles (Ref 39). BNG would be delivered for the Proposed Onshore Scheme through a mix of onsite and offsite measures for the creation and enhancement of habitats.

8.9.39 The calculation within the Statutory Biodiversity metric provides a quantitative assessment of BNG. An early indicative BNG calculation for the Amendment to Kiln Lane Substation Scenario has been completed, excluding options to co-locate construction access and the proposed Underground HVAC Cable Corridor with Sea Link, excluding options to locate HVDC cabling within Sizewell Link Road construction corridor and excluding mitigation planting. The indicative BNG calculation is being used to help to inform landscaping proposals onsite and to inform ongoing engagement with a range of nature conservation stakeholders and landowners in relation to potential offsite habitat creation/enhancement opportunities for BNG.

8.9.40 The results of the indicative BNG calculation estimate the on-site baseline to comprise approximately 1,519 habitat units, 215 hedgerow units and 25 watercourse units. The on-site post-construction was estimated to be 1,461 habitat units, 185 hedgerow units and 25 watercourse units. This relates to an on-site net change of approximately -58 habitat units (-3.83%), -30 hedgerow units (-13.98%) and no change in watercourse units (0.00%).

8.9.41 In order to achieve a minimum 10% BNG, the Proposed Onshore Scheme will follow the Biodiversity Gain Hierarchy, looking to further minimise impacts to biodiversity within the DOL and optimise the BNG value of habitat within the DOL. The anticipated shortfall in biodiversity units below 10% will then be addressed through off-site opportunities for habitat creation or enhancement that also deliver wider environmental benefits and where possible also compliment proposals to enhance the Suffolk and Essex Coast National Landscape.

8.10 Summary of residual effects

8.10.1 **Table 8.14** provides a summary of the residual effects relating to construction and **Table 8.15** relating to operation. No residual effects have been identified for decommissioning.

8.10.2 The assessment has concluded that the residual effects of the Proposed Onshore Scheme, during the construction phase, would be adverse at County scale (Moderate effects) for HPI woodland by the River Fromus and other hedgerows and tree lines, and adverse at Local scale (Minor effects) for habitats within and surrounding Harris's Belt and Pit, and habitats between Moat Road and Pretty Road. The preliminary assessment has shown that the effects are likely to be significant. The effects relate to habitat losses of mature trees and

woodland that cannot be readily mitigated, and as such compensation measures are proposed for these residual effects.

8.10.3 Environmental effects of the Proposed Onshore Scheme, during the construction phase, on veteran trees would be mitigated through design and implementation of bespoke tree management and protection measures, such that there is no significant residual effect.

8.10.4 Environmental effects of the Proposed Onshore Scheme, during the construction phase, on ecological features relating to bats (Annex II species), bats (non-Annex II species categorised as widespread), breeding birds associated with farmland habitats and the water vole population associated with the River Fromus would be mitigated through habitat creation, such that there is no significant residual effect.

8.10.5 Environmental effects of the Proposed Onshore Scheme, during the operational phase, on ecological features relating to bats (Annex II species) through illumination of foraging and commuting habitat at Kiln Lane Substation would be mitigated through design and implementation of a sensitive lighting strategy, such that there is no significant residual effect.

8.10.6 There are no environmental effects (and therefore no residual effects) relating to decommissioning of the Proposed Onshore Scheme with regard to ecological features.

Table 8.14: Summary of assessment of likely significant effects during construction

Receptor	Environmental effect without further mitigation	Additional Mitigation	Residual effect
Habitats within and surrounding Harris's Belt and Pit	Habitat loss of ecologically valuable line of trees – adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios but Northern Route option for the proposed Underground HVAC Cable Corridor only.	Not feasible (compensation to be provided)	Adverse effect at Local scale, (**Minor effect**) which is **significant**.
River Fromus and associated habitats	Habitat loss of HPI woodland - adverse effect at County scale (**Moderate effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios and unaffected by options.	Not feasible (compensation to be provided)	Adverse effect at County scale, (**Moderate effect**) which is **significant**.
Habitats between Moat Road and Pretty Road	Habitat loss of ecologically valuable line of trees – adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios and unaffected by options.	Not feasible (compensation to be provided)	Adverse effect at Local scale, (**Minor effect**) which is **significant**.

Receptor	Environmental effect without further mitigation	Additional Mitigation	Residual effect
Other ancient and veteran trees	Deterioration and potential indirect loss of veteran trees – adverse effect at National scale (**Major effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios and unaffected by options.	Bespoke tree management and protection measures	**Not significant**
Other hedgerows and tree lines	Habitat loss of ecologically valuable line of trees and mature trees within hedgerows - adverse effect at County scale (**Moderate effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios and unaffected by options.	Not feasible (compensation to be provided)	Adverse effect at County scale, (**Moderate effect**) which is significant.
Bats (Annex II species)	Loss of foraging and commuting habitat at Kiln Lane Substation - adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to Full Build Out of Kiln Lane Substation Scenario only.	Habitat creation around Kiln Lane Substation	**Not significant**
Bats (non-Annex II species categorised as widespread)	Loss of foraging and commuting habitat at Kiln Lane Substation - adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to Full Build Out of Kiln Lane Substation Scenario only.	Habitat creation around Kiln Lane Substation	**Not significant**
Bats (non-Annex II species categorised as widespread)	Loss of foraging and commuting habitat to east of the proposed Converter Station - adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios but Northern Route option for the proposed Underground HVAC Cable Corridor only.	Habitat creation at the proposed Converter Station Site.	**Not significant**
Breeding birds associated with farmland habitats	Loss of breeding habitat for skylark and yellow wagtail - adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to both Kiln Lane Substation scenarios and unaffected by options.	Habitat creation within and adjacent to the proposed Converter Station Site.	**Not significant**
Water vole associated with the River Fromus	Loss/fragmentation of water vole habitat - adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to both Kiln Lane Substation Scenarios and unaffected by options.	Habitat creation adjacent to River Fromus and provision	**Not significant**

Receptor	Environmental effect without further mitigation	Additional Mitigation	Residual effect
		of mammal ledge within culvert.	

Table 8.15: Summary of assessment of likely significant effects during operation

Receptor	Environmental effect without further mitigation	Additional Mitigation	Residual effect
Bats (Annex II species)	Disturbance of bats through illumination of foraging and commuting habitat at Kiln Lane Substation adverse effect at Local scale (**Minor effect**) which is **significant**. Applies to both delivery scenarios.	Sensitive lighting strategy to maintain dark east to west corridor for bat foraging and commuting.	**Not significant**

8.11 Monitoring

8.11.1 No additional monitoring is proposed for Ecology and Biodiversity beyond that outlined in **paragraph 8.9.22**.

Topic Glossary and Abbreviations

Term	Definition
AA	Appropriate Assessment
ALBST	Advanced licence bat survey techniques
APIS	Air Pollution Information System
AQ	Air Quality
ARN	Affected Road Network
AWI	Ancient Woodland Inventory
BNG	Biodiversity Net Gain
CFGM	Coastal floodplain grazing marsh
CIEEM	Chartered Institute of Ecology and Environmental Management
CL	Critical Loads
CoCP	Code of Construction practice
CWS	County Wildlife Site
DAS	Discretionary Advice Service
DLL	District Level Licensing
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
eDNA	Environmental DNA
ESC	East Suffolk Council
FLL	Functionally Linked Land. Provides an important role in maintaining or restoring the population of qualifying species of a European site at favourable conservation status.
GCN	Great crested newt
GLTA	Ground Level Tree Assessment
HDD	Horizontal Directional Drilling
HPI	Habitats of Principal Importance
HRA	Habitats Regulations Assessment
IACPC	Impact Assessment and Conservation Payment Certificate
IEFs	Important Ecological Features
INNS	Invasive Non-Native Species

Term	Definition
IRZ	Impact Risk Zone
LEMP	Landscape and Ecology Management Plan
LMDW	Lowland mixed deciduous woodland
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographic Information for the Countryside
NE	Natural England
NNR	National Nature Reserve
NPS	National Policy Statement
NVC	National Vegetation Classification
PEA	Preliminary Ecological Appraisal
pSAC	possible Special Areas of Conservation
pSPA	potential Special Protection Areas
PTES	People's Trust for Endangered Species
RCA	River Condition Assessment
RIAA	Report to Inform Appropriate Assessment
RPA	Root Protection Area
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation
SBIS	Suffolk Biodiversity Information Service
SCC	Suffolk County Council
SEAS	Suffolk Energy Actions Solutions
sHRA	shadow Habitats Regulations Assessment
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Areas
SPI	Species of Principal Importance
SSSI	Sites of Special Scientific Interest
SWT	Suffolk Wildlife Trust
ZoI	Zone of Influence

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