

**RWE Renewables UK Dogger Bank
South (West) Limited**

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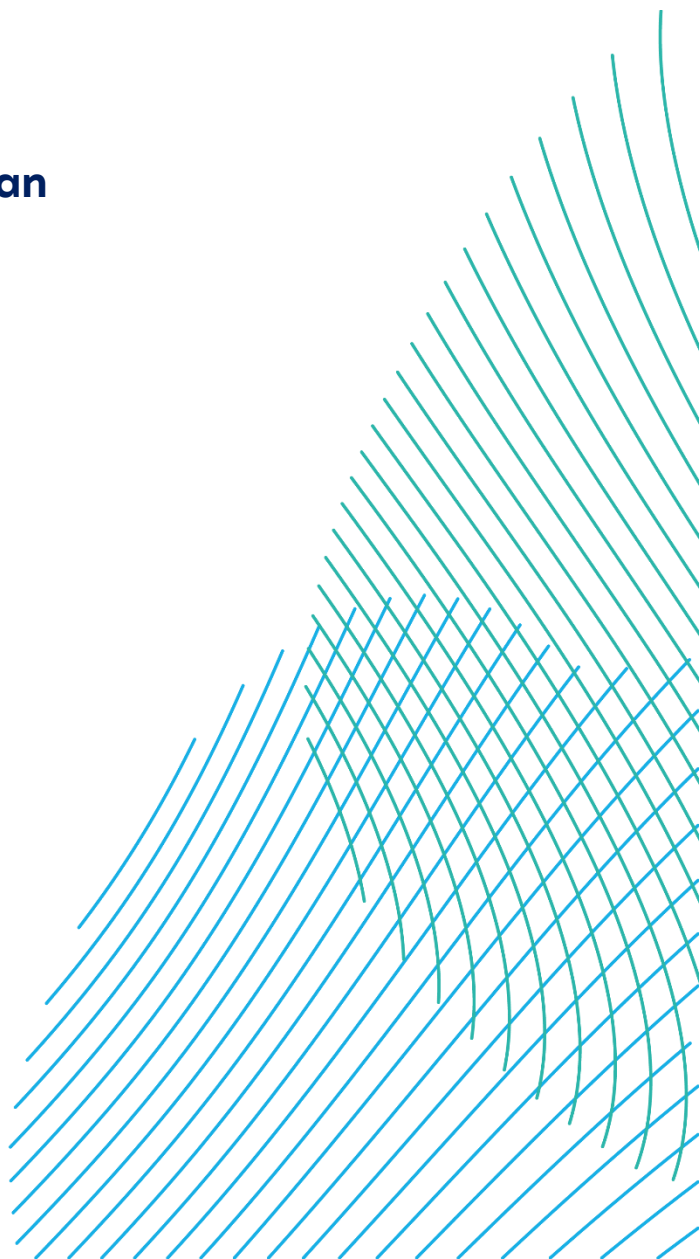
Dogger Bank South Offshore Wind Farms

**Outline Ecological Management Plan
(Revision 5) (Tracked)
Volume 8**

April 2025

**Application Reference: 8.10
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Unrestricted



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Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	June 2024	Final for DCO Application	RHDHV	RWE	RWE
02	November 2024	Submission at previous Draft Deadline 2	RHDHV	RWE	RWE
03	December 2024	Submission in response to Natural England Relevant Representation	RHDHV	RWE	RWE
04	February 2025	Submission for Deadline 2	RHDHV	RWE	RWE
05	April 2025	Submission for Deadline 4	RHDHV	RWE	RWE

Revision Change Log			
Rev No.	Page	Section	Description
01	N/A	N/A	Submitted for DCO Application
02	17	1.3.2.12	'Other Habitats' in relation to trees has been updated to confirm an Arboricultural Impact Assessment (AIA) has been undertaken. This has been updated in response to the submission of the AIA to the ExA on the 8 th November (Revision 2) [AS-036] and [AS-037].
02	31	Section 1.4 Table 1-1	The mitigation for trees has been updated to confirm an Arboricultural Impact Assessment (AIA) has been undertaken. This has been updated in response to the submission of the AIA to the ExA on the 8 th November (Revision 2) [AS-036] and [AS-037].
02	37	1.5.3.1	The mitigation wording has been updated to confirm that if vegetation removal is required during the bird nesting season, an ornithologist/ecologist should be on site and oversee each section that is cut down. This has been added in response to the Environment Agency Relevant Representation (RR-015:14) [PDA-013]. Which stated, ' <i>Leaving it for 48 hours after the initial check, risks birds coming in and starting nesting.</i> '
02	49 to 50	1.6.2.2	Additional section added to summarise the key mitigation measures for trees from the preliminary AIA and Outline Arboricultural Method Statement submitted to the ExA on the 8 th November (Revision 2) [AS-036] and [AS-037].
02	56	1.6.3.3	The mitigation wording has been updated to confirm that as well as covering excavations at night, they should also be fitted with a ramp to allow pets and wild animals to escape if they should fall into them. This has been added in response to the Environment Agency Relevant Representation (RR-015:15) [PDA-013].
03	N/A	N/A	The OEMP has been updated in response to Natural England Relevant Representation on RR-039: B25 Construction [AS-048].
03	49	1.6.2	Updated to add further detail on the mitigation for the Maritime Cliff and Slope habitat at the emergency beach access.
03	68	1.10.2	Updated to include the monitoring requirement of the Maritime Cliff and Slope habitat at the emergency beach access.
04	18, 20	1.3.2.11	The hedgerow length and line of tree lengths have been updated following a review to calculate the total hedgerow loss (see below).

04	19 32/33	1.3.2.11 Table 1-1	The Outline Ecological Management Plan (Revision 4) [document reference 8.10] has been updated to add clarification on the width of hedgerow removal where the haul road adjoins the public highway.
04	20	1.3.2.11	The Outline Ecological Management Plan (Revision 4) [document reference 8.10] has been updated to include the total approximate hedgerow removal as a result of the Projects as requested by the ExA in Supplementary Agenda Questions for Issue Specific Hearing 2 (ISH2) [EV5-002] point ISH2.9.15.
04	35	Table 1-1	Additional embedded mitigation measures have been added for Otter and Water Vole and Ancient Woodland as a result of responses provided to Action Point 39 from Day 2 of the ISH2 on 16 January 2025 [EV5-004] and in response to the Woodland Trusts Written Representation REP1-089:3 to REP1-089:5.
04	35 40	Table 1-1 1.5.2.1	The Outline Ecological Management Plan (Revision 4) [document reference 8.10] has been updated in response to the Woodland Trusts Written Representation REP1-089:3 to REP1-089:5. The Applicants have responded in the Applicants Responses to Written Representations [document reference 12.2] in regard to the committed trenchless crossing depth under ancient woodland.
04	54	1.6.2.3	Additional clarification on ancient wood land ‘enhancements’ has been added in response to Action Point 14 from Day 2 of the ISH2 on 16 January 2025 [EV5-004] as detailed in The Applicants’ Responses to January 2025 Action Points (Revision 2) [AS-155].
04	46	1.5.3.4	Updated references to Appendix 18-9 Water Voles and Otters Report (Revision 2) in response to in response to Action Point 39 from Day 2 of the ISH2 on 16 January 2025 [EV5-004] as detailed in The Applicants’ Responses to January 2025 Action Points (Revision 2) [AS-155] whereby the Onshore Order Limits have been updated in Appendix 18-9 to amend an error in the survey results map. Further detail on the potential impacts to water voles present in ditch ID 54 has also been included.
04	N/A	N/A	Additional reference to requirement 23 of the Draft DCO (Revision 5) [REP-005] in regard to European protected species onshore has been added where relevant.
05	N/A	N/A	The Outline Ecological Management Plan (Revision 4) [document reference 8.10] has been updated following Issue Specific Hearing 4 Action Points [EV9-002].

05	19 34	1.3.2.11 Table 1-1	In response to Action Point 34 of EV9-002, 'where required' has been added to clarify that the 6m hedgerow removal for 'haul road crossings adjoining the public highway' would only be where required and would not be in all instances.
05	70	1.10.1.2	In response to Action Point 37, the OEMP has been updated to ensure that ERYC is consulted on the ecological work reports and records of any breaches as referred to in paragraph 227 and 228 of the OEMP.
05	42	1.5.2.1	In response to Action Point 40, ERYC have been added a consultee on the proposed depths and details of the trenchless crossing works at Bently Moor Wood ancient woodland.
05	71	1.10.2	In response to Action Point 35, monitoring requirements in relation to hedgerow removal during construction has been added to the OEMP.
05	20 68 72	1.3.2.12 1.8.2 1.10.2	In response to Action Point 38, 'like for like' has been amended to use wording which clearly states that any failed planting would be replaced with the same planting choice which has failed.
05	N/A	N/A	The Outline Ecological Management Plan (Revision 4) [document reference 8.10] has been updated in response to the Applicants response to the Examining Authority's Written Questions (ExQ1) where relevant [REP3-027].
05	26, 27, 28, 35, 38, 39, 40	Table 1-1	The table has been updated to align with the information contained in Table 18-4 of Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019] in response to the ExAs Written Questions (ExQ1) ENC.1.7.
05	34 42	Table 1-1 1.5.2	Additional wording has been added in response to ExQ1ENC.1.5 in regard to the Management of Hedgerows (England) Regulations 2024.

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Glossary

Term	Definition
Haul Road	The track along the Onshore Export Cable Corridor used by traffic to access different sections of the Onshore Export Cable route for construction.
Horizontal Directional Drill (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossing other obstacles such as roads, railways and watercourses onshore.
Landfall	The point on the coastline at which the Offshore Export Cables are brought onshore, connecting to the onshore cables at the Transition Joint Bay (TJB) above mean high water.
Landfall Zone	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) and the Transition Joint Bays (TJBs) inclusive of all construction works, including the landfall compounds, Onshore Export Cable Corridor and intertidal working area including the Offshore Export Cables.
Onshore Converter Stations	A compound containing electrical equipment required to transform HVDC and stabilise electricity generated by the Projects so that it can be connected to the electricity transmission network as HVAC. There will be one Onshore Converter Station for each Project.
Onshore Development Area	The Onshore Development Area for ES is the boundary within which all onshore infrastructure required for the Projects would be located including Landfall Zone, Onshore Export Cable Corridor, accesses, Temporary Construction Compounds and Onshore Converter Stations.
Onshore Export Cable Corridor	This is the area which includes cable trenches, Haul Roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the Onshore Converter Stations, Transition Joint Bays or temporary access routes; but includes Temporary Construction Compounds (purely for the cable route).

Term	Definition
Onshore Export Cables	Onshore Export Cables take the electric from the Transition Joint Bay to the Onshore Converter Stations.
Onshore Substation Zone	Parcel of land within the Onshore Development Area where the Onshore Converter Station infrastructure (including the Haul Roads, Temporary Construction Compounds and associated cable routeing) would be located.
Onward Cable Connection	Area of 400kV HVAC onshore export cable from the Onshore Converter Stations to the Proposed Birkhill Wood National Grid Substation.
Temporary Construction Compound	An area set aside to facilitate construction of the Projects. These will be located adjacent to the Onshore Export Cable Corridor and within the Onshore Substation Zone, with access to the highway.
The Applicant	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).
Transition Joint Bay	The Transition Joint Bay (TJB) is an underground structure at the landfall that houses the joints between the Offshore Export Cables and the Onshore Export Cables.
Trenching	Open cut method for cable or duct installation.

Acronyms

Term	Definition
BoCC	Birds of Conservation Concern
CIEEM	Chartered Institute of Ecology and Environmental Management
DBS	Dogger Bank South
DCO	Development Consent Order
DLL	District Level Licensing
eDNA	Environmental DNA
ECow	Ecological Clerk of Works
EMP	Ecological Management Plan
EPS	European Protected Species
ES	Environmental Statement
GB	Great Britain
GCN	Great Crested newt <i>Triturus cristatus</i>
HA	Hectare
HDD	Horizontal Direction Drill
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
LPA	Local Planning Authority
LWS	Local Wildlife Site
OCocP	Outline Code of Construction Practice
OEMP	Outline Ecological Management Plan

Term	Definition
OLMP	Outline Landscape Management Plan
PEIR	Preliminary Environmental Information Report

1 Outline Ecological Management Plan

1.1 Introduction

1.1.1 Purpose and implementation of the Outline EMP

1. This document sets out the Outline Ecological Management Plan (OEMP) for the proposed Dogger Bank South (DBS) East and DBS West Offshore Wind Farms, collectively known as DBS Offshore Wind Farms (herein 'the Projects') in respect of terrestrial (onshore) ecology and ornithology. The OEMP sets out an outline of the actions that are proposed to avoid or mitigate ecological impacts during the pre-construction, construction and operation phases of the Projects. This OEMP will form the basis for a final Ecological Management Plan (EMP), which will be prepared and submitted prior to the commencement of onshore construction activities associated with the Projects. This is supported by the inclusion of Requirement 12 of the draft Development Consent Order (DCO) which states:

12.-(1) *No phase of the onshore works may commence until a written ecological management plan (which accords with the outline ecological management plan and the relevant recommendations of appropriate British Standards or Industry Guidance) for that phase reflecting the survey results and ecological mitigation and enhancement included in the environmental statement has been submitted to and approved by the relevant planning authority in consultation with Natural England and (where works have potential to affect wetland habitat) the Environment Agency.*

(2) *Pre-commencement site clearance works must only take place in accordance with a specific written ecological management plan for site clearance works (which accords with the relevant details for pre-commencement site clearance works in the outline ecological management plan) has been submitted to and approved by the relevant planning authority.*

(3) *Any ecological management plan submitted under sub-paragraph (1) may cover one or more phase of the onshore works.*

(4) *Each ecological management plan must include an implementation timetable and must be carried out as approved.*

2. The purpose of the OEMP is to provide a single document that presents the ecology and nature conservation management and mitigation measures that will be undertaken prior to, during and post the construction of the onshore elements of the Projects. It also provides information on any long-term management measures required to enable the reinstatement and/ or enhancement of habitats.
3. This OEMP is a live document and will be updated as necessary prior to its implementation. It provides details of pre-construction ecology surveys which will be required in order update the ecological baseline and inform the final management and mitigation plan.
4. The aim of this OEMP is to ensure the protection and appropriate management of ecological receptors within the area to be affected by the Projects. Alongside adherence to legislative requirements relating to ecology and nature conservation.
5. This OEMP has been drafted based on the findings of pre-construction surveys undertaken in 2022 and 2023 and other relevant documents. Further information with regard to specific survey findings and locations can be found within the following documents:
 - **Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2);**
 - **Volume 7, Appendix 18-3 Great Crested Newt Report (application ref: 7.18.18.3);**
 - **Volume 7, Appendix 18-4 Badger Report – Confidential (application ref: 7.18.18.4);**
 - **Volume 7, Appendix 18-5 Bats Report - Ground Level Tree Assessment (application ref: 7.18.18.5);**
 - **Volume 7, Appendix 18-6 Bats Report - Monthly Activity Transects (application ref: 7.18.18.6);**
 - **Volume 7, Appendix 18-7 Ornithology Overwintering Report (application ref: 7.18.18.7);**
 - **Volume 7, Appendix 18-8 Ornithology Breeding Bird Report (application ref: 7.18.18.8);**
 - **Appendix 18-9 Water Voles and Otters Report, (Revision 2) [document reference 7.18.18.9];**
 - **Volume 7, Appendix 18-10 Biodiversity Net Gain Strategy (application ref: 7.18.18.10); and**

- **Volume 8, Outline Landscape Management Plan (OLMP) (application ref: 8.11).**
6. This OEMP has been developed to support **Volume 7, Chapter 18: Terrestrial Ecology and Ornithology (application ref: 7.18)** of the Environmental Statement (ES) as part of the Applicants' project's DCO application.
 7. A range of Commitments have been developed to eliminate or reduce impacts as far as possible. All Commitments identified for the Projects to date are detailed in the Commitments Register (see **Commitments Register (Volume 8, application ref: 8.6)**) and are summarised within the relevant topic specific chapters of the ES.
 8. This OEMP should be read in conjunction with the **Outline Code of Construction Practice (OCoCP) (Volume 8, application ref: 8.9)**.

1.1.2 Structure

9. This OEMP adheres to the following structure:
 - Section 1.2 – General Responsibilities;
 - Section 1.3 – Ecological and Nature Conservation Features;
 - Section 1.4 – Embedded Mitigation;
 - Section 1.5 – Pre-construction Mitigation Measures;
 - Section 1.6 – Construction mitigation measures;
 - Section 1.7 – Post construction mitigation measures;
 - Section 1.8 – Long term ecological management;
 - Section 1.9 – Biodiversity Enhancements;
 - Section 1.10 – Monitoring and Reporting; and
 - Section 1.11 – Indicative Timetable of Suitable Works Periods.

1.2 General Responsibilities

10. The roles and responsibilities will be appointed by the Principal Contractor or the Applicants. All of the ecological work described in this OEMP will be undertaken under the guidance of the appointed Project(s) Ecological Clerk of Works (ECoW).
11. Site inductions and toolbox talks for all site workers would include reference to the requirements of the EMP and Code of Construction Practice (CoCP).
12. The ECoW would undertake the following tasks:
 - Arrange all specialist environmental surveys;
 - Undertake regular environmental site inspections;
 - Assist (where deemed necessary) the Principal Contractor or the Projects Manager(s) in delivering site inductions and toolbox talks (e.g. presentations and the dissemination of information to site personnel on ecological matters). All briefings would include reference to the requirements set out in the EMP. The site-wide ecological requirements would be explained within these briefings. Additional toolbox talks may also be provided for each new area of works to ensure that area-specific requirements are fully understood and implemented;
 - Assist in reviewing Risk Assessments and Method Statements (RAMS); and
 - Notifying the Principal Contractor of any issues/breaches in the EMP and/or CoCP.
13. All site workers would be briefed on the role and responsibility of the ECoW. Contact details for the ECoW would be provided within the EMP and would be made available to site workers and contractors. A copy of the EMP would be kept on site at all times and site workers would be made aware of its location along with the details of the person to contact in order to obtain a copy.
14. Any known breaches of the requirements documented within the EMP would be reported to the ECoW by the Principal Contractor Site Manager or site workers (either directly or through the Principal Contractor Site Manager) as soon as practicable.
15. Should it become evident to the ECoW that a breach of the requirements of the EMP has occurred, the ECoW would be responsible for reporting this breach to the responsible Environment Manager(s) and Site Manager(s). Where necessary, the responsible Environment Manager(s) and Site Manager(s) would report any breaches to the relevant authorities.

16. The ECoW would be responsible for developing an appropriate ecology and nature conservation incident response plan for any breach of the EMP, should an ecology and nature conservation incident occur. The responsible Environment Manager would ensure that any remedial measures proposed are communicated and where required, approved by the relevant Local Planning Authority (LPA), which for the Projects is East Riding of Yorkshire Council (ERYC). Where appropriate Natural England would be consulted with to obtain their agreement for any remedial measures that may be required, as would the Environment Agency specifically in relation to wetlands.
17. The final EMP would be a live document and the ECoW would be responsible for reviewing and updating the EMP, ensuring that the Principal Contractor and all site personnel are aware of the latest version.

1.3 Ecological and Nature Conservation Features

18. This section describes the important ecological features within or adjacent to the Onshore Development Area that could be affected by the Projects. The locations of the features are shown in **Volume 7, Figure 18-3 and 18-4 (application ref: 7.18.1)** and **Volume 7, Appendix 18-2 Habitat Survey Report Appendix C Habitat Survey Results Map (application ref: 7.18.18.2)**.

1.3.1 Designated Sites

1.3.1.1 Statutory Designated sites

19. The habitat surveys identified five SSSIs, and one Local Nature Reserve (LNR), within 2km of the Onshore Study Area (**Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2)**). These were: Burton Bushes SSSI, Leven Canal SSSI, Pulfin Bog SSSI, Hornsea Mere SSSI, and Beverley Parks LNR. They can be seen on **Volume 7, Figure 18-3 (application ref: 7.18.1)**.
20. The habitat surveys also identified three SPAs (Greater Wash SPA, Hornsea Mere SPA, and Humber Estuary SPA) and one SAC (Humber Estuary SAC) within the zone of influence (10km) of the Onshore Study Area (**Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2)**). They can be seen on **Volume 7, Figure 18-2 (application ref: 7.18.1)**.
21. Direct impacts to statutory designated sites for nature conservation have been avoided wherever possible as part of the site selection and route planning process. However, detailed air quality assessments suggested that the mudflats and sandflats not covered by seawater at low tide within the Humber Estuary SAC could be affected by the increase NO_x and NH₃ from road traffic associated with the Projects during the construction phase.

1.3.1.2 Non-statutory designated sites/ Local Wildlife Sites

22. The habitat survey report identified 23 non-statutory Local Wildlife Sites (LWSs) within 2km of the Onshore Study Area (**Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2)**). The LWSs were typically designated for their habitats, including grassland, hedgerows and woodland. One LWS was designated for standing water and another LWS was designated for waxcap grassland fungi. None of these sites are designated for any bird species.
23. Non-statutory designated sites for nature conservation have been avoided where possible; however, there are six non-statutory designated nature conservation sites wholly or partially within or adjacent to the Onshore Development Area as presented in Table 18-14 of **Volume 7, Chapter 18: Terrestrial Ecology and Ornithology (application ref: 7.18)** and shown on **Volume 7, Figure 18-4 (application ref: 7.18.1)**.

1.3.2 Habitats

24. All habitats recorded within the Onshore Development Area are based on UKHab v1 classification system (UKHab 2020). The locations of these habitats can be found in **Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2)**.
25. The following habitats were recorded within the Onshore Study Area as defined within **Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2)**.

1.3.2.1 Agricultural Land/ Cropland

26. The vast majority of the area surveyed, 395.09 ha (86.41%), was classed as cropland for a variety of crops and arable field margins.

1.3.2.2 Grassland Habitats

27. Grasslands, (neutral grassland, other neutral grassland, *Arrhenatherum* neutral grassland, and modified grassland) amounted to 32.855ha (7.19%).

1.3.2.3 Urban Habitats

28. Built up areas and gardens, developed land sealed surface, buildings, other developed land, artificial unvegetated unsealed surface, and suburban / mosaic of developed/ natural surface amounted to 6.586ha (1.44%).

1.3.2.4 Woodland and Forest Habitats

29. Wet woodland, other woodland; broadleaved, other broadleaved woodland types) amounted to 3.782ha (0.83%).

- 30. The Onshore Export Cable Corridor avoids all areas of ancient woodland. There is an area of ancient woodland within the Onshore Substation Zone. However, works associated with the Onshore Converter Station (s) will avoid direct impacts to this woodland.
- 31. Woodland areas will not be directly impacted because trenchless techniques such as Horizontal Directional Drilling (HDD) will be used. Woodland LWS is to be completely avoided. However, the Priority Habitat may be indirectly affected by activities which generate fugitive emissions (i.e. dust and emissions from an increase in construction traffic and road access).
- 32. The woodland broad habitat type also include open grown (individual) trees.

1.3.2.5 Marine Inlets and Transitional Waters

- 33. Beach totalled 14.37ha (3.14%) of the Onshore Development Area, extending from the western edge of the Marine Cliff and Slope habitat down to the MLWS, where terrestrial habitat ends, and the marine environment starts.

1.3.2.6 Other

- 34. Road verges amounted to 1.594ha (0.35%).

1.3.2.7 Wetland Habitats

- 35. Lowland fens and other swamps amounted to 1.871ha (0.41%). The lowland fen is classified as an irreplaceable habitat, regardless of the condition it is in. Trenchless crossing, such as HDD or other trenchless crossing technique, will be used to avoid any impacts on the lowland fen habitat. The Haul Road design has been amended to avoid any direct impacts on this habitat.

1.3.2.8 Heathland and Shrub

- 36. This included bramble, hawthorn and mixed scrub and amounted to 0.533ha (0.12%) of the Onshore Development Area.

1.3.2.9 Rivers and Lakes

- 37. Standing open water and canals, and rivers accounted for 0.37ha (0.08%).

1.3.2.10 Sparsely Vegetated Land

- 38. Maritime cliff and slopes, located adjacent to the Landfall amounted to 0.168ha (0.04%).

1.3.2.11 Linear Habitats

- 39. Hedgerows amounted to 16,927m, standing open water amounted to 4,773m, and line of trees amounted to 632m.

40. The habitats recorded have the potential to meet the criteria for the following Priority Habitats:
- Arable field margins;
 - Arable margins sown with tussocky grasses;
 - Arable margins sown with wild flowers or a pollen and nectar mix;
 - Game bird mix strips and corners
 - Lowland fens;
 - Rivers;
 - Maritime cliffs and slopes;
 - Wet woodland; and
 - Hedgerows.
41. The habitat surveys recorded that the Onshore Development Area runs through predominantly agricultural land, including improved grassland.
42. Arable fields are typically of low value and are suboptimal for use by protected and notable species. However, arable fields can also be an important wintering bird food sources and can provide nesting habitat for ground-nesting birds such as skylark *Alauda arvensis*. Terrestrial mammals such as brown hare (a Priority Species) also use arable fields for foraging and shelter.
43. A total of 47 native and 67 historically and ecologically important hedgerows will be impacted by the cutting/coppicing. For an in-isolation scenario, the maximum width for hedgerow removal is 15m for the Export Cable Corridor and 20m for the Onward Cable Connection. For Concurrent and Sequential Scenarios, the anticipated maximum width for hedgerow removal is up to 24m for the Onshore Export Cable Corridor and up to 34m for the Onward Cable Connection to the Proposed Birkhill Wood National Grid Substation. Where the crossing of a hedgerow can be limited to a Haul Road only, the maximum hedgerow removal width would be limited to 5m where the haul road crosses a field and a minimum of 6m where the haul road adjoins the public highway, [where required](#). Where hedgerows intersect with construction access points off of existing roads, an average of 25m (12.5m from the centre point) of hedgerow will be removed for access and visibility splays, where possible this would be limited to pruning rather than full removal of a hedge. Locations of each hedgerow affected is provided in the **Tree Preservation Order & Hedgerow Plans (Revision 4)** [REP1-003].

44. Whilst it is anticipated that an average (across the Projects) of 25m of hedgerow could be lost per access location for visibility splays, the final amount of hedgerow loss will vary depending on the specifics of each access point and will be agreed at the detailed design stage through the Construction Traffic Management Plan and Ecological Management Plan. Through the detailed design of the accesses and crossings, the Projects will engage with the with East Riding of Yorkshire Council to reduce the amount of hedgerow loss through measures such as pruning, reduced speed limits or traffic signals. Based on this assumption, along with the associated hedgerow loss due to the off-route haul road, the Onshore Export Cable Corridor and any TCCs, the total estimated hedgerow loss as a result of the Projects, concurrent or sequentially would be approximately 5,592m. This calculation is subject to amendment at the detailed design stage when further micro siting and refinement of the design would be expected.

1.3.2.12 Other Habitats

45. There is 632m of the UKhab (v1) habitat type 'line of trees' within the Onshore Development Area. The Projects are committed to minimising the impact on all trees and trees within hedgerows within the Onshore Development Area, as outlined in **Volume 7, Chapter 18 Terrestrial Ecology and Ornithology (application ref: 7.18)**. A detailed tree survey was undertaken in early 2024 in accordance with the British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction, to inform the Arboriculture Impact Assessment (AIA). The **Arboricultural Survey Report, Preliminary Arboricultural Impact Assessment and Outline Arboricultural Method Statement (Revision 2)** [AS-036] was submitted to the Examining Authority on the 8th November 2024. This would be updated prior to construction to incorporate any changes to design if required. Any trees that cannot be avoided must be replaced with suitable native species in accordance with the Outline Landscape Management Plan (Revision 4) [document reference 8.11] to ensure no net loss in line with Appendix 18-10 Biodiversity Net Gain Strategy [APP-057]. ~~at a minimum of like-for-like.~~
46. Road verges amounted to 1.58ha, 0.35% of the Onshore Development Area.
47. Urban habitats including developed land, sealed surfaces, buildings, artificial unvegetated unsealed surface, and other developed land amounted for 6.586 ha (1.44%) of the Onshore Development Area; all have a negligible ecological value.

1.3.3 Protected and Notable Species

1.3.3.1 Birds

48. All bird species are protected under the Wildlife and Countryside Act 1981 (WCA) (as amended). This prevents killing or injuring any bird or damaging or destroying nests and eggs. Certain species (including barn owl *Tyto alba*) are also listed under Schedule 1 of the WCA, which prohibits intentionally or recklessly disturbing the species at, on or near an 'active' nest.

1.3.3.1.1 Overwintering Birds

49. The 2023 overwintering bird surveys undertaken identified a total of 104 species, with an average of 58 species recorded from a transect **Volume 7, Appendix 18-7 Ornithology Overwintering Report (application ref: 7.18.18.7)**
50. Sixty BoCC were recorded, consisting of 19 red listed and 41 amber listed species. In addition, 12 WCA Schedule 1 species were recorded. A total of 17 species protected under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC) were recorded. Section 41 of the NERC Act refers to a published list of habitats and species which are of principal importance for the conservation of biodiversity in England.

1.3.3.2.1 Breeding Birds

51. During the breeding bird surveys undertaken between March 2023 and July 2023, a total of 116 species. Sixty-nine BoCC species were recorded, consisting of 21 red listed and 48 amber listed species and 11 WCA Schedule 1 species were recorded. The full survey results of the breeding bird survey is provided **Volume 7, Appendix 18-8 Ornithology Breeding Bird Report (application ref: 7.18.18.8)**.

1.3.3.2 Bats

52. All bat species are listed under Annex IV (and certain species also under Annex II) of the Habitats Directive and are given UK protected status by Schedule 2 of the Conservation of Habitats and Species Regulations 2017. Bats and their roosts also receive protection from disturbance through the Wildlife and Countryside Act 1981. This protection extends to both the species and roost sites. It is an offence to kill, injure, capture, possess or otherwise disturb bats. Bat roosts are protected at all times of the year (making it an offence to damage, destroy or obstruct access to bat roosts), regardless of whether bats are present at the time.

1.3.3.1.2 Roosting Bats

53. A Ground Level Tree Assessment has been undertaken of trees within the Onshore Development Area. The majority of survey work was completed in the months of February and March 2023; all survey work was completed by September 2023.
54. In total 62 trees were surveyed; although no bat roosts were confirmed. The surveys identified 48 trees with bat roost potential, 19 of these located within the Onshore Development Area. The trees are located across the Ground Level Tree Assessment Survey Area, with the majority in and around the Onshore Converter Station area (**Volume 7, Appendix 18-5 Bats Report – Ground Level Tree Assessment (application ref: 7.18.18.5)**). Of the 19 trees located within the Onshore Development Area, two were found to be of high potential to support roosting bats, eight of moderate potential and eight of low potential. Five of these trees will be avoided by the use of trenchless crossing techniques, which will avoid direct impact to possible roosts in one tree considered to be of high potential, two of moderate and two of low potential to support roosting bats.
55. Many of the trees considered to be potential bat roosts are located in and around Bentley Moor Wood, in the Onshore Converter Station area, that will be protected from direct impact as part of the embedded mitigation **Volume 7, Appendix 18-5 Bats Report – Ground Level Tree Assessment (application ref: 7.18.18.5)**.
56. Ash dieback was present in the trees surveyed therefore, their bat suitability could change quickly as the disease could cause new features to appear, quicker than usual e.g. flaking bark.

1.3.3.2.2 Foraging and Commuting Bats

57. Monthly transect surveys were undertaken between April and October 2023. Seven species were recorded during the static monitoring and transect surveys **Volume 7, Appendix 18-6 Bats Report – Monthly Activity Transects (application ref: 7.1818.6)**:
- Common pipistrelle *Pipistrellus pipistrellus*;
 - Soprano pipistrelle *Pipistrellus pygmaeus*;
 - Nathusius' pipistrelle *Pipistrellus nathusii*;
 - Common noctule *Nyctalus noctule*;
 - Leisler's bat *Nyctalus leisleri*;
 - Daubenton's bat *Myotis daubentonii*; and
 - Whiskered bat *Myotis mystacinus*.

58. *Myotis spp.* and *Pipistrelle spp.* were also recorded, where identification to species level was not possible.
59. Surveyors recorded several common pipistrelle bats commuting towards the coast along a road leading west out of Skipsea, with at least 11 individuals observed approximately 30 minutes after sunset in July, indicating the likely presence of a roost in one of the buildings on Hornsea Road (approximate location NGR TA 17381 55128).
60. Monthly static monitoring surveys were carried out along each transect). Species recorded included:
 - Natterer's bat *Myotis nattereri*;
 - Brown long-eared bat *Plecotus auratus*;
 - Common pipistrelle;
 - Soprano pipistrelle;
 - Nathusius' pipistrelle;
 - Common noctule;
 - Leisler's bat;
 - Daubenton's bat;
 - Whiskered bat; and
 - At least one undetermined *Myotis* species.

1.3.3.3 Badgers

61. Badgers *Meles meles*, and their setts, are protected under the Protection of Badgers Act 1992. Actions prohibited under this legislation, include the intentional or reckless damage, obstruction or destruction of a badger sett and the wilful killing, injuring or taking of badgers, unless covered by licence.
62. Badger surveys were undertaken between March and August 2023. The field surveys identified four badger setts within the Onshore Development Area and a further five setts within 30m of the Badger Survey Area. There is one particular 'hotspot' of badger activity which is to the north-east of Beverley (**Volume 7, Appendix 18-4 Badger Report – Confidential (application ref: 7.18.18.4)**).
63. Specific details and locations of badger setts have been omitted from this OEMP and is available to consultees on request. This will also apply to the final EMP.

1.3.3.4 Water Vole and Otter

64. Otter *lutra lutra* are protected in accordance with Schedule 5 of the WCA. The otter is also a protected species included in Annex II of the Habitats Directive and is protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. It is an offence to intentionally kill, injure or take an otter from the wild, or to intentionally or recklessly damage, destroy or obstruct access to any habitat used by otters or to disturb the otters which make use of those habitats. The water vole *Arvicola amphibius* is protected in accordance with Schedule 5 of the WCA. It is an offence to intentionally damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection, or to disturb water voles whilst they are using such a place. It is also an offence to kill, injure, capture or possess water voles.
65. The full survey results of the riparian mammal survey is provided (**Appendix 18-9 Water Voles and Otters Report (Revision 2)** [document reference 7.18.18.9]). During the riparian mammal survey undertaken between April and September 2023, evidence of otters within the Onshore Development Area was identified in the Otter spraint (droppings) found on three ditches across the Onshore Development Area: Stream Dike, Beverly Barmston Drain, and Ditch 80 (**Appendix 18-9 Water Voles and Otters Report (Revision 2)** [document reference 7.18.18.9]).
66. Eight watercourses were found to have evidence of water vole presence, including latrines burrows and feeding remains. Of these eight ditches, six were clustered within the central part of the route, north of Beverley either side of the River Hull crossing.

1.3.3.5 Reptiles

67. All native reptiles are listed on Schedule 5 of the WCA (as amended and are afforded protection under Sections 9(1) and 9(5)). For the reptile species adder *Vipera berus*, grass snake *Natrix helvetica* (previously *Natrix natrix*), slow-worm *Anguis fragilis* and common lizard *Zootoca vivipara*, this protection prohibits deliberate or reckless killing and injury but does not include habitat protection. Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* receive full protection under the WCA (as amended) and Conservation of Habitats and Species Regulations 2017.
68. The Habitat Survey undertaken between May and August 2022, identified six areas suitable for reptile species. Log piles were also identified in four locations which could act as a shelter.
69. Due to lack of historical records and their southern distribution ranges, it is unlikely that sand lizard or smooth snake would be found in the Project area.

1.3.3.6 Great Crested Newts (GCN)

70. Great Crested Newts are fully protected in accordance with both national and international legislation. The species is listed under Annexes IV and II of the Habitats Directive, and Schedule 2 of The Conservation of Habitats and Species Regulations 2017. The species is also protected by Sections 9(4) and 9(5) of the Wildlife and Countryside Act 1981. It is an offence to knowingly or recklessly kill, injure, disturb, handle or sell the animal, and this protection is afforded to all life stages. It is unlawful to deliberately or recklessly damage, destroy, or obstruct the access to any structure or place used for shelter or protection; this includes both the terrestrial and aquatic components of its habitat.
71. In total, 126 were surveyed, including nine in April to June 2022 and 117 were surveyed Mid-April to June 2023 **Volume 7, Appendix 18-3 Great Crested Newt Report (application ref: 7.18.18.3)**. Of the ponds assessed for GCN habitat suitability, 11 ponds located within the 250m GCN buffer were classified as either 'Excellent' or 'Good'. There were no ponds within the Onshore Development Area that were assessed as either 'Excellent' or 'Good'.
72. Out of all ponds analysed for GCN eDNA, one pond within the Onshore Development Area returned a positive result, and a further nine ponds within the 250m GCN buffer were also found to be positive.

1.3.3.7 Invasive Non-native Species

73. The Habitat Survey undertaken between May and August 2022, recorded four instances of INNS of plants. These related to Japanese knotweed *Reynoutria japonica*, Himalayan balsam *impatiens glandulifera*, and two records of snowberry *Symphoricarpos albus*. However, none were identified within the Onshore Development Area during the 2023 habitat surveys. **(Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2).**
74. American mink *Neovision vison* scat was observed on one ditch and Holderness Drain.

1.3.3.8 Other Notable Species

75. No specific surveys were completed for other notable species including hedgehog and brown hare.
76. Due to the suitable habitats present the surveys determined that the Onshore Development Area is likely to be suitable for brown hare, including the use of arable fields for foraging and shelter.

77. Hedgehogs were recorded on some occasions during other surveys, such as bat activity surveys. Therefore, they are considered present within the Onshore Development Area.
78. Should any other protected and/ or notable species that were scoped out (e.g. hazel dormouse) be found during the pre-construction and construction phases, works must stop immediately, and further advice sought from the ECoW team and/ or Natural England.

1.4 Embedded Mitigation

79. This section outlines the embedded mitigation relevant to the Terrestrial Ecology and Ornithology assessment, incorporated into the design of the Projects or constitutes standard mitigation measures for this topic (**Table 1-1**).

Table 1-1 Embedded Mitigation Measures

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
Outline Code of Construction Practice (OCoCP)	The OCoCP (application ref: 8.9) outlines the control measures and standards that will be implemented to control the impacts on the environment.	DCO Requirement 19
<u>Ecological Management Plan</u>	<u>An Ecological Management Plan (EMP) will be developed in accordance with the Outline Ecological Management Plan (OEMP) (Revision 5) [document reference 8.10]. The OEMP includes but is not limited to pre-construction, construction, and post-mitigation measures relating to habitats, hedgerows, birds, bats, badgers, otters, water voles, reptiles, GCN, and other protected or notable species where relevant. The EMP will include details of any long-term mitigation and management measures relevant to terrestrial ecology and ornithology and nature conservation. The EMP will be developed in consultation with the relevant stakeholders.</u>	<u>DCO Requirement 12</u>
Routing	The route of the Onshore Export Cable Corridor has been determined as part of a detailed site selection process (see Volume 7, Chapter 4 Site Selection and	DCO Schedule 1

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	Assessment of Alternatives (application ref: 7.4)]. The Onshore Export Cable Corridor has been designed to avoid sensitive landscape and ecological elements, such as woodland, buildings and trees, where the loss of such features would be detrimental to the character of the area. Statutory designated sites for nature conservation have been avoided wherever possible as part of the site selection and route planning process. In addition, the Applicants have committed to reinstating all LWS habitat after construction. Multiple non-statutory sites do lie wholly or partially within the Onshore Study Area. Although most impacts on the Nunkeeling Lane Local Wildlife Site (LWS) will be avoided by the selection of a trenchless crossing technique e.g. HDD, a small section will be affected by the construction of a temporary Haul Road crossing. Similarly, trenchless crossing techniques will also be employed at Beeford-Dunnington Road Verge LWS but a short section of the LWS will be affected by the construction of a temporary Haul Road crossing Volume 7, Appendix 5-2 Obstacle Crossing Register (application ref: 7.5.5.2). All LWS habitat will be reinstated following construction in consultation with ERYC and the Yorkshire Wildlife Trust. The Substation Zone has been designed to avoid direct impacts on Bentley Moor Wood LWS. Other sites will be protected using other mitigation measures including buffers and dust suppression techniques as outlined within the OEMP (Volume 8, application ref: 8.10).	
<u>Designated Sites</u>	<u>Statutory designated sites for nature conservation have been avoided wherever possible as part of the site selection and route planning process. In addition, the</u>	<u>DCO Schedule 1</u>

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	<u>Applicants have committed to reinstating all LWS habitat after construction.</u> <u>Multiple non-statutory sites do lie wholly or partially within the Onshore Study Area. Although most impacts on the Nunkeeling Lane Local Wildlife Site (LWS) will be avoided by the selection of a trenchless crossing technique such as HDD, a small section will be affected by the construction of a temporary Haul Road crossing. Similarly, trenchless crossing techniques will also be employed at Beeford-Dunnington Road Verge LWS but a short section of the LWS will be affected by the construction of a temporary Haul Road crossing Appendix 5-2 Obstacle Crossing Register (Revision 4) [document reference: 7.5.5.2]. All LWS habitat will be reinstated following construction in consultation with ERYC and the Yorkshire Wildlife Trust, additional mitigation is discussed in Table 18-14 of Chapter 18 Terrestrial Ecology and Ornithology (Revision 5) [REP2-019].</u> <u>The Substation Zone has been designed to avoid direct impacts on Bentley Moor Wood LWS. Other sites will be protected using other mitigation measures including buffers and dust suppression techniques as outlined within this document.</u>	
Habitat Loss	Habitats between Jointing Bays will have topsoil and subsoil reinstated within two years from the start of construction i.e. from the point at which habitat is removed from any one area. Areas allocated for Temporary Construction Compounds (TCCs) and Haul Roads will be reinstated when construction has been completed. Permanent habitat loss has been minimised during the site selection and route	DCO Requirement 12

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	refinement process of the Projects, with the most sensitive habitats, being avoided where possible. Sensitive habitats are defined as those listed as high or very high importance as described in Table 18-19 of Volume 7, Chapter 18: Terrestrial Ecology and Ornithology (application ref: 7.18). The lowland fen is classified as an irreplaceable habitat, regardless of the condition it is in. Trenchless crossing techniques, such as HDD, will be used to avoid any impacts on the lowland fen habitat. The Haul Road design has been amended from the PEIR to avoid any direct impacts on the habitat, as detailed in Volume 7, Appendix 18-2 Habitat Survey Report (application ref: 7.18.18.2). The lowland fen is to be considered a no-go area for construction machinery and/ or for storage of materials or equipment. All temporary and permanent habitat loss will be kept to a minimum, where possible.	
Cable Crossings beneath Main Rivers	All Main Rivers will be crossed using trenchless techniques such as HDD to avoid direct interaction with these watercourses. The crossing methodology will be agreed with the Environment Agency prior to construction. Trenchless crossing methodologies entry and exit points will be located at least 20m from Environment Agency surface water courses or the landward toe of the Environment Agency surface watercourse's flood defences and would be installed at a depth to minimise potential interaction with current, or any planned, infrastructure (e.g., sheet piles), at least 2m below the channel bed.	DCO Requirement 19

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
Cable Crossing beneath Ordinary Watercourses	Ordinary watercourses may be undertaken by open cut methods. In such cases, temporary measures will be employed to maintain flow of water along the watercourse. Trenchless crossing methodologies (e.g. HDD) entry and exit points will be located at least 9m away from Internal Drainage Board (IDB) and Ordinary surface watercourses to ensure the ongoing maintenance of IDB drains. The crossing methodology for all water courses is set out in the Volume 7, Appendix 5-2 Obstacle Crossing Register (application ref: 7.5.5.2). The detailed methodology to be used for any temporary construction at crossing points over existing ditches and watercourses shall be agreed with the Environment Agency, LLFA and Internal Drainage Board (IDB), as appropriate. See Crossing Method Statement(s), below. A 6m wide strip from the outside edge of any pipe which is forming a culverted IDB watercourse will be maintained during both construction and once it is located in situ to enable access and to prevent damage. If temporary culverts are needed, they will be adequately sized to avoid impounding flows (including allowing for increased winter flows as a result of climate change) and the invert set below bed level to allow bedload transport. As referenced in the OCoCP (Volume 8, application ref: 8.9) where temporary dams are used: The Onshore Export Cables will be set below the channel bed at a depth dependent on local geology and geomorphological risks. This would	DCO Requirement 19

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	avoid exposure during periods of higher energy flow when the bed could be mobilised. This depth takes into consideration anticipated climate-change related changes in fluvial flows and erosion that will occur over time; • The amount of time that temporary dams or flumes are in place will be kept to a minimum; • Flumes or pumps would be adequately sized to ensure that flows downstream are maintained whilst minimising upstream impoundment; • A sediment / siltation trap would be installed upstream of any temporary dams, the contractor should remove excess sediment before, or as they remove the temporary dam, to stop mobilisation downstream once works complete; • A silt trap would also be installed downstream to of the temporary dam to capture any sediment that is over pumped, for lower flows this could also be captured by the use of hay bales or similar; • A review of the weather forecast, and any flood alerts will be undertaken, to ensure works are not undertaken during flood events; • Scour protection would also be used to protect the riverbed downstream of the dam from high energy flow at the outlets of flumes and pumps; • If a diversion channel is required, geotextiles or similar techniques will be used to line the channel and prevent sediment entering the watercourse; • Vegetation would not be removed from the banks unless necessary to undertake the works, in which case	

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	removal would be restricted to the smallest practicable footprint; - Channel bed and banks would be sympathetically reinstated (e.g. by replacing re-sectioned banks with more natural profiles that are typical of the natural geomorphology of the watercourse) avoiding very wet weather conditions at any time of the year; - Prior to dewatering the area between the temporary dams, a fish rescue would be undertaken; and - Pumps would be fitted with 2mm diameter mesh for over-pumping of watercourses where fish could be present.	
Crossing Method Statements	As referenced in the OCoCP (Volume 8, application ref: 8.9) the Principal Contractor will be required to prepare a Crossing Method Statement Prior to Construction. This will set out construction operations to be undertaken (including construction methods and types of plant required) and the associated environmental and health and safety issues for certain crossings where an increased risk is identified. The method statements will include details of crossing techniques to be deployed at crossings, including sensitive environmental crossings (such as Main Rivers). These will be developed with the relevant asset owner or key stakeholder such as the Environment Agency, IDB or ERYC.	DCO Requirement 19
Hydrogeological Risk Assessments	Ground investigations and a hydrogeological risk assessment meeting the requirements of the Environment Agency's approach to groundwater protection (Environment Agency, 2018)	DCO Requirement 19

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	would be undertaken at each trenchless crossing location. Where the Projects cross watercourses connected to sites of particular sensitivity (e.g. Sites of Special Scientific Interest (SSSI) or groundwater Inner Source Protection Zones (SPZs)) a hydrogeological risk assessment will be undertaken to inform the site specific crossing method statement. The risk assessment, which would be desk-based, follows a tiered approach with more detailed assessments carried out in areas considered to be a potentially greater risk to groundwater. The production of the hydrogeological risk assessment would be undertaken prior to the commencement of construction works (should one be deemed necessary) and meet the requirements of Environment Agency's Approach to Groundwater Protection 2018 Framework.	
Drilling Fluid Breakout Management Plan	A Drilling Fluid Breakout Management Plan will be agreed with the Environment Agency prior to commencement of construction activities. Bentonite or another inert clay-based material (comprising 95% water and 5% clay) would be used as a lubricant at the drill head for trenchless crossing techniques.	DCO Requirement 19
Hedgerows	For an In Isolation Scenario, the maximum width for hedgerow removal is 15m for the Export Cable Corridor and 20m for the Onward Cable Connection. For Concurrent and Sequential Scenarios, the anticipated maximum width for hedgerow removal is up to 24m for the Onshore Export Cable Corridor and up to 34m for the Onward	DCO Requirement 12

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	Cable Connection to the Proposed Birkhill Wood National Grid Substation. Where the crossing of a hedgerow can be limited to a Haul Road only, the maximum hedgerow removal width would be limited to 5m where the haul road crosses a field and a minimum of 6m where the haul road adjoins the public highway, where required. Where hedgerows intersect with construction access points off of existing roads, an average of 25m (12.5m from the centre point) of hedgerow will be removed for access and visibility splays, where possible this would be limited to pruning rather than full removal of a hedge. Hedgerows that intersect with TCCs will be removed where it is not possible to protect the hedgerow during the construction works. All affected hedgerows within the Onshore Development Area will be replanted and restored post construction. In line with the Management of Hedgerows (England) Regulations 2024, green cover buffer strips will be established and maintained within 2 meters of the centre of a hedgerow to prevent soil erosion and water run-off. All mitigation measures in relation to hedgerows covering the different Construction Scenarios are provided in section 53.	
Trees	Where possible trees within the Onshore Development Area will be retained. Trees identified to be retained will be fenced off and root protection zones established according to best practice and professional advice. Where this is not possible, any trees that require removal would be replanted in a suitable location within the Onshore	DCO Requirement 12

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	Development Area, but not directly over the Onshore Export Cables. A detailed tree survey of the whole Onshore Development Area was undertaken in early 2024 in accordance with the British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction, to inform the Arboriculture Impact Assessment (AIA). The Arboricultural Survey Report, Preliminary Arboricultural Impact Assessment and Outline Arboricultural Method Statement (Revision 2) [AS-036] was submitted to the Examining Authority on the 8th November 2024. Mitigation and Compensation measures are included in Section 5.3 and Section 6. The Arboricultural Impact Assessment would be updated prior to construction to incorporate any changes to design if required. All mitigation measures in relation to trees are provided in section 1.6.2.2.	
<u>Roosting Bats</u>	<u>All affected trees will need be re-assessed for their suitability for roosting bats prior to construction start, as the potential roost features on trees are likely to change and new features can form overtime due to weather increments and natural processes, such as tree decay.</u> <u>Trees with bat roost potential will be subjected to further survey in accordance with best practice guidelines and, once completed, a roosting bat impact assessment can be finalised. Survey methods include, but are not limited to, endoscope inspections, aerial tree surveys (tree climbing or using mobile elevated working platforms (MEWPs)) by a bat licenced ecologist. Once trees have been assessed the combined impact on roosting,</u>	<u>DCO Requirement 12</u>

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	<u>foraging, and commuting bats can be assessed:</u> <u>Where targeted surveys had found no evidence of roosting bats, trees with low bat roost potential (as classified in accordance with Bat Conservation Trust guidelines) would be soft felled, as would any trees with High or Moderate bat roost potential. Tree survey methods include, but are not limited to, endoscope inspections, aerial tree surveys (tree climbing or using mobile elevated working platforms (MEWPs)) by a bat licenced ecologist.</u>	
Landscape Management Plan	A Landscape Management Plan (LMP) will be developed in accordance with the OLMP (application ref: 8.11). The Landscape Management Plan will include details of mitigation planting at the Onshore Converter Station site, including the location, number, species and details of management and aftercare maintenance of new planting. Where practical, landscape mitigation planting will be established as early as reasonably practicable in the construction phase. Further details in relation to habitat restoration and the LMP are included in section 1.7.	DCO Requirement 10
Vegetation Clearance	All vegetation requiring removal will be undertaken outside of the bird breeding season. If this is not reasonably practicable, the vegetation requiring removal will be subject to a nesting bird check by a suitably qualified Ecological Clerk of Works (ECoW). If nesting birds are present, the vegetation will not be removed until the young have fledged, or the nest failed.	DCO Requirement 12

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	All mitigation measures in relation to vegetation clearance are provided in section 1.6.	
Badgers	Where required, provision will be made for badger access in relevant construction areas, when work is not taking place in order to ensure normal movements as far as reasonably possible. Provision will be made to ensure avoiding the entrapment of any animals within relevant construction areas. Checks will be made prior the start of any works to ensure no animals are trapped and if any have fallen in. Appropriate checks will be made as required by the ECoW. All mitigation measures in relation to Badgers are provided in section 1.5.3.3.	DCO Requirement 12
Otter and Water Voles	Prior to the commencement of construction activities, pre-construction otter and water voles surveys would be undertaken. All mitigation measures in relation to otters and water voles are provided in section 1.6.3.4.	DCO Requirement 12 and DCO Requirement 23
Ancient Woodland	In the instance of trees being within an area of ancient woodland, the Applicants are committed to using trenchless crossing techniques, such as HDD, at depths greater than 5 meters, as recommended by the Woodland Trust. If any constraints are identified during detailed geotechnical investigations, shallower depths will only be attempted if clear evidence is provided to demonstrate that this would not result in adverse impacts on roots, soils, or the rhizosphere along or above the proposed route.	DCO Requirement 12
Construction Lighting	Construction site lighting will only operate when required and will be positioned and directed to avoid unnecessary illumination	DCO Requirement 19

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
	to residential properties, sensitive ecological receptors, footpath users, and minimise glare to users of adjoining public highways. Construction site lighting will be designed in accordance with latest relevant available guidance and legislation and the details of the location, height, design and luminance of lighting to be used will be detailed within the final Code of Construction Practice. Permanent lighting at the Onshore Converter Stations has been designed to be directed inwards and provided only to essential areas of the site such as key routes and building entrances. This would produce minimal levels of overspills and help maintain dark corridors along key ecological features during the operation phase such as hedgerows and ancient woodland. The design of construction site lighting will accord with the details provided in the OCoCP (Volume 8, application ref: 8.9) and permanent lighting in the Design and Access Statement (Volume 8, application ref: 8.8) submitted with the DCO application. All mitigation measures in relation to lighting are provided in section 1.6.3.2.	
<u>Operational Lighting</u>	<u>Operational lighting at the Onshore Converter Stations would be designed in accordance with latest guidance and legislation. The details of the location, height, design and luminance of lighting to be used would be provided as part of detailed design for the Onshore Converter Stations. No permanent night-time lighting would be required. Security lighting will be installed as agreed in the written scheme for the management and mitigation of artificial light emissions during the operation.</u>	<u>DCO Requirement 22</u>

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
Ponds	All ponds identified during the route planning and site selection process have been avoided where possible. All mitigation measures in relation to Great Crested Newts (GCN) clearance are provided in section 1.5.3.5 and 1.6.3.6.	DCO Requirement 12
Reptiles	A competent person will undertake a search of all working areas identified as being suitable for reptiles. Any reptiles found within the working area will be relocated into suitable adjacent habitat within the reptile active season which runs from April to October. Habitat manipulation will be undertaken in order to discourage reptiles from the working area(s) with vegetation clearance cut in two stages under ECoW watching brief before each cutting stage. All mitigation measures in relation to Reptiles clearance are provided in section 1.5.3.6.	DCO Requirement 12
Pre-construction Surveys	Prior to the commencement of construction activities, pre-construction surveys will be undertaken by the ECoW where necessary, in accordance with the latest available species-specific guidance.	DCO Requirement 12
Decommissioning Plan	An Onshore Decommissioning Plan will be developed prior to decommissioning in a timely manner. The Onshore Decommissioning Plan will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure and details relevant to flood risk, pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan will be drawn in line with the latest relevant available guidance and legislation.	DCO Requirement 27

Parameter	Embedded Mitigation Measures	Where Commitment is Secured
Ecological Monitoring	Onshore ecological monitoring will be developed and agreed with stakeholders prior to construction, and are described in section 1.10.	DCO Requirement 12

1.5 Pre-construction Mitigation Measures

80. This section describes the ecological mitigation measures that would be undertaken prior to the commencement of construction to ensure the protection of ecological receptors.

1.5.1 General Pre-Construction Measures

81. Due to the mobility of species and the period of time which would have lapsed between the pre-application surveys and the start of construction (approximately 2026), all features surveyed during the pre-application survey effort, and any additional survey locations or features would be re-surveyed, where necessary, in accordance with industry guidance and methodology (e.g. following the approach used during pre-application surveys or updated best practice at that time).
82. It is possible that additional ecological receptors may be recorded during these pre-construction surveys. Where this occurs, the EMP would be reviewed and updated to include measures for such receptors where appropriate including any statutory body consultations. All pre-construction surveys would be undertaken by appropriately experienced and, where necessary, licensed ecologists. All surveys would be carried out in accordance with bio-security risk assessments and safe systems of works (e.g. RAMS), which would be produced by the appropriately experienced surveying ecologists and subsequently approved by the Principal Contractor, prior to the commencement of a survey.
83. The requirement for, and scope of, updated surveys would be dependent on the time elapsed since previous surveys and the extent of any change to supporting habitats, which would be informed through an updated Extended UK Habitat classification survey of the construction footprint (including appropriate buffer). All survey updates would be undertaken in accordance with relevant guidance (e.g. CIEEM, 2019).

84. **Table 1-2** presents an indicative list of the pre-construction surveys that will be undertaken alongside each optimal survey period and potential licensing requirements.

Table 1-2 Pre-Construction Surveys and Potential Licencing Requirements for Protected Species

Protected Species	Number of survey visits	Survey timings	Potential Licensing requirements
Badger	One visit six months prior to construction.	Any time of year but February to April is optimal.	Most likely
Bats	One Ground Level Tree Assessment, six months prior to construction.	Any time of the year.	Potentially EPS
Overwintering birds	Pre-construction surveys may be required if works are undertaken during the over-wintering season.	November to February.	Unlikely
Breeding birds	Two visits per month during nesting season if work likely to affect nesting habitat.	April - June.	Unlikely
Otter and Water Vole	Two visits six months prior to construction.	April to September (inclusive).	Unlikely
Great Crested Newts	No further surveys required.	N/A	Yes - DLL

1.5.2 Habitats (Including Designated Sites)

1.5.2.1 Protective Buffer Zones

85. The EMP would specify protective buffer zones around key retained habitats (e.g. woodland, mature broadleaved trees, ponds, important grasslands and sections of watercourses). These would be specified in the EMP and relevant construction drawings, with reference to other appropriate documents, including Tree Protection Plans (TPPs) which would be derived from the AIA and assessment undertaken post DCO consent and standard industry guidance (e.g. BS5837:2012).
86. No works would be undertaken within these buffer zones, which would be maintained throughout the construction works period. Buffer zones surrounding retained areas of woodland and mature broadleaved trees would be at least 15m in width or at least the width of the tree root protection zone (whichever is greater), as advised by an appropriately qualified arboriculturist. Where practicable, buffer zones around hedgerows being retained would be at least 5m in width or a minimum of 2 meters from the centre of a hedgerow to prevent soil erosion and water run-off. Additional buffer zones, where required, would be identified by the ECoW around habitat features of value to protected species.
87. All buffer zones would prohibit the tracking of heavy vehicles, and the storage of vehicles, machinery, equipment and soils. Buffer zones would be clearly marked out as specified in the TPP (e.g. using Heras fencing or equivalent) or using high-visibility Netlon fencing or coloured tape, and/or signs describing the prohibitive requirements of the zones would be installed at appropriate locations. Where necessary, specific locations and any requirements would be discussed on site.
88. It is anticipated that Bentley Moor Wood and LWS located within the Onshore Substation Zone will be avoided by the use of trenchless crossing techniques such as HDD. Where the Projects are committed to trenchless crossing under an area of ancient woodland, as is the case at Bentley Moor Wood, the Applicants are committed to trenchless crossing techniques at depth greater than 5m as recommended by the Woodland Trust, unless following detailed geotechnical investigations clear evidence is provided to demonstrate that a shallower depth would not result in adverse impacts on roots, soils or rhizosphere along or above the proposed route. This would be agreed in consultation with ERYC.

1.5.3 Protected and Notable Species

89. Pre-construction measures in respect of protected and notable species would be specified in the EMP. Key measures are set out below.

1.5.3.1 Birds

90. The removal of vegetation should be scheduled to avoid the breeding bird season (March – September inclusive) in order to negate potential disturbance of nesting birds. At locations where works could cause disturbance to nesting birds or if habitat clearance is required during the nesting season, a thorough inspection should be carried out by a suitably competent person, such as an ecologist or ornithologist, to check for the presence of active birds' nests prior to any disruptive activity. If active birds' nests are found, these would be retained in-situ, a buffer zone suitable to the relevant species would be established and allowed to reach their natural conclusion without being disturbed or damaged.
91. A small number of ground nesting species were recorded during the bird surveys, this included lapwing in discrete locations. Measures should be put in place to ensure nests are not impacted upon, such as avoiding works in the area during the breeding season, this species is likely to re-use the same locations in successive years, therefore a check of known areas in February/March is prudent.
92. Sand martin *Riparia riparia* were recorded in the maritime cliff at the Landfall location. Works must start prior to the breeding season and alternative, artificial nesting locations provided. Sand martins would then be monitored throughout the works at this location by a suitably qualified ornithologist. Artificial nesting boxes can be used in artificial cliffs or banks, the boxes are designed to replicate natural nesting. Deterrents can be set up prior to the breeding season, however they do not have a guaranteed success to deter sand martins from nesting.
93. Any exclusion zones/ buffer areas would be based on species type and sensitivity (advice on this being provided by the ECoW or a suitably experienced ornithologist) but would be at least 5m and marked out to prevent accidental disturbance (advice on the most appropriate technique for the species and location being provided by the ECoW or a suitably experienced ornithologist).

94. It should be noted that if a breeding pair of any bird of prey are within the Onshore Development Area, they have large buffer zones that vary for each species but are at least 200m from the nest site. Marsh harrier was confirmed as a breeder adjacent to the Onshore Development Area (**Volume 7, Appendix 18-7 Ornithology Overwintering Report (application ref: 7.18.18.7)**) and the buffer can be at least 200m depending on activity but normally equal or greater than 500m.
95. Areas of arable fields within that have the potential to support nesting birds would be managed prior to commencement of construction to deter birds which may seek to use this habitat for nesting. Such management measures may involve the clearance of ground cover (e.g. arable cover) to create unfavourable nesting conditions. No works (e.g. site clearance) likely to impact areas where skylarks are present would be undertaken, until the required measures (e.g. habitat removal) have been undertaken, and measures such as habitat removal itself would take place outside the skylark nesting season.
96. Works and disturbances are to be minimised at Skipsea Beach and the River Hull as they had the highest concentrations of bird activity (**Volume 7, Appendix 18-7 Ornithology Overwintering Report (application ref: 7.18.18.7)**).
97. At Skipsea Beach, a maximum of six exit pits are expected to be used with the expected dimensions 20m x 10m x 3m (length x width x depth). These will be a minimum of 50m from the cliffs (**Volume 7, Chapter 5, Project Description (application ref: 7-2)**). The exit pits will contain an inert substance and will be washed into the sea naturally, and therefore no impacts to birds are anticipated. Any marine impacts are assessed in the relevant offshore chapters.
98. Woodland areas will be avoided and retained and as well as smaller copses or tree groups, where present along the corridor. Many of the hedgerows and arable field margins, where present, provided resources to wintering birds on the site, it is understood that impacts to these habitats will be unavoidable. However, these will be re-instated once the works within the Onshore Development Area are completed. This may provide an opportunity to diversify enhance species composition in the hedgerows as well as infill any gaps (**Volume 7, Appendix 18-7 Ornithology Overwintering Report (application ref: 7.18.18.7)**).
99. During the construction works, should over-wintering birds be present, the ECoW will be responsible for advising on the appropriate levels of mitigation, e.g., watching briefs, tool box talks to the construction personnel, etc.

100. Where it is unavoidable to fell sections of hedgerows, scrub, or woodland along the cable corridor they will be replanted, where these habitats are felled and not able to be replanted due to substation zone structures, these should be replanted elsewhere as part of the Projects (**Volume 7, Appendix 18-7 Ornithology Overwintering Report (application ref: 7.18.18.7)**).

1.5.3.2 Bats

101. The Onshore Development Area provides suitable habitat including woodland, hedgerows, rivers (such as the River Hull), and streams, for roosting, foraging and commuting bats.
102. All suitable trees and/or features within and up to a 50m buffer of the Onshore Development Area including those that have already been identified as suitable will be subject to further pre-construction surveys. The surveys will be undertaken within the appropriate survey window to ascertain the presence or likely absence of transitional/ hibernating/ roosting bats.
103. The pre-construction survey effort will include a Tree Roost Assessment Survey that may involve tree climbing or use of mobile elevated working platforms (MEWP). All trees will need be re-assessed for their suitability for roosting bats prior to construction start, as the potential roost features on trees are likely to change and new features can form overtime due to weather increments and natural processes, such as tree decay. Any trees that are found to have High or Moderate roosting potential in accordance with Bat Conservation Trust classification guidelines (Collins, 2023) will require further survey in accordance with best practice guidelines and once completed, a roosting bat impact assessment can be finalised. Survey methods include, but are not limited to, endoscope and tree climbing by a bat licenced ecologist.
104. A report of the pre-construction bat survey findings and recommendations would be produced by the suitably qualified and bat licenced ecologist and provided to the Environment Manager(s) and Site Manager (s). The report would also be made available to relevant stakeholders.
105. Subject to the results of the pre-construction bat roost surveys, an application would be made for a Natural England Bat Mitigation Licence (A13) for any works likely to impact confirmed bat roosts. A copy of this form and report would be provided to Natural England and East Riding of Yorkshire Council as soon as reasonably practicable, and as prescribed by the conditions of the Natural England Bat Mitigation Licence (A13).

106. No works would be undertaken affecting confirmed bat roosts until the licence and corresponding mitigation measures were in place in accordance with requirement 23 of the **Draft DCO (Revision 5)** [REP-005]. Works would be undertaken in accordance with the licence method statement, which would detail the timing and method for the removal of trees or other structures supporting bat roost(s), provision of replacement roost(s) (e.g. bat boxes), habitat creation/management, and any monitoring requirements.
107. All trees with low bat roost potential (as classified in accordance with Bat Conservation Trust guidelines) would be soft-felled, as would any trees with High or Moderate bat roost potential where targeted surveys had found no evidence of roosting bats. Trees with Negligible roost potential can be felled by standard methodology. Mitigation measures such as soft-felling or section-felling would likely be included (amongst other mitigation measures) within the Method Statement of any Bat EPS Mitigation Licences to fell any trees in which roosting bats have been confirmed present, although this would be determined on an individual (per tree) basis depending on the nature of the roost feature. Trees with High or Moderate bat roost potential which have been found to support no roosting bats would still be soft-felled as a precaution, although this would not need to be done under licence given that appropriate surveys would have confirmed no roosting bat presence. Soft-felling involves severance of the feature with bat roost potential (a limb with a niche in it, or a part of a tree trunk with a woodpecker hole in it, for example) from the tree structure, without damaging the potential roost feature itself, and gentle lowering to the ground, typically using ropes. The severed limb/tree part is then left on the ground for at least 24 hours, with the intact potential roost feature facing sideways/upwards (not facing into the ground) so as to allow any bats present to emerge (depending on weather conditions the 24hr period may be extended). All tree surgeons would be briefed on this approach prior to commencing works on relevant trees.
108. The following pre-construction mitigation measures for commuting and/or foraging bats within the Onshore Development Area would also be implemented:
 - Where possible, hedgerow removal would be undertaken during the winter, to allow time for bat species to adjust. Furthermore, the length and width of hedgerow requiring removal would be minimised wherever possible, such as by aligning hedgerow crossings with existing hedge gaps; and

- Where existing habitats are located adjacent to construction works areas, these areas would be retained and protected from damage where possible, using fencing.

1.5.3.3 Badgers

109. A pre-construction badger survey of the Onshore Development Area and 30m buffer zone would be undertaken by competent ecologists in order to locate any potential new active setts that could cause a constraint to construction. The survey will be undertaken during a single visit, six months prior to construction. The survey can be undertaken any time of year, though February through to April is considered optimal. If mitigation cannot be carried out to protect any setts as required under legislation, then a Natural England licence to close or disturb the sett(s) may be required and would be obtained prior to the commencement of works.
110. If the pre-construction surveys identify areas of key commuting value for badgers (such as well-worn paths connecting setts or foraging grounds) which would be bisected by the Onshore Export Cable Corridor, warning signs would be installed and reduced speed limits for construction vehicles would be implemented to address increased risk of road traffic accidents with badgers.
111. Where an active badger sett is identified within 30m of the works a Natural England licence to interfere with setts for development purposes (A24 and LR24) for badgers would be obtained. Where badger setts are identified but works can be maintained at least 30m away (e.g. where a Natural England licence is either not required as works are located out of the 30m buffer zone), the ECoW would ensure that a 30m buffer is set up around those active setts. No works would be undertaken within this 30m buffer unless advised to be acceptable by the ECoW. Once the licence has been obtained, the works would need to be carried out in accordance with the requirements of the licence and supervised by the ECoW.
112. Mitigation within a Natural England Natural England licence to interfere with setts for development purposes (A24 and LR24) may require:
 - Main sett replacement in the proposed Mitigation Areas and closure under licence;
 - A replacement sett must be in place six months in advance of closure of existing sett, and badgers must have used the artificial sett;
 - Sett closure can only occur between 1 July and 30 November;
 - If it is a main sett proof of use of the artificial sett is required prior to closure of the main sett; and

- Bait marking surveys may be required to ensure the artificial sett is not being built in another clan's territory.

1.5.3.4 Otters and Water Vole

113. Due to the mobility of otter and water voles and the period of time which would have lapsed between the pre-application surveys and the start of construction (expected 2026), a suite of pre-construction checks for otter and water voles would be undertaken between four to twelve months prior to the start of construction to determine the requirement for any Natural England licences. The first part of the pre-construction check would be that all watercourses within the Onshore Development Area would be re-appraised for the suitability of the habitat for otter and water vole as part of the updated Extended UK Habitat classification survey. Any watercourses which are found to provide suitable habitat for otter and/or water vole and which are due to be directly impacted would be the subject of more detailed field survey as part of the pre-construction surveys.
114. Subject to the results of any pre-construction otter and water vole surveys, if required an application to Natural England for the required licence(s) would be submitted in accordance with requirement 23 of the **Draft DCO (Revision 5)** [REP-005]. No works would be undertaken affecting these species until the Licence(s) is in place, and works would be undertaken in accordance with the Licence Method Statement(s) as stated in requirement 23 of the **Draft DCO (Revision 5)** [REP-005].

115. Based on the findings from the pre-application survey results in **Appendix 18-9 Water Voles and Otters Report (application ref: 7.18.18.9) (Revision 2)** [document reference 7.18.18.9], ditch ID 54 (South Bullock Dike) which is classified as 'optimal suitability and water vole present' would be impacted by the off route temporary haul road proposed in this location. The haul road was rerouted here to avoid any direct impacts to the lowland fen priority habitat within the Onshore Export Cable Corridor. The haul road would result in temporary culverts installed at crossing points WX-043A and WX-043B of South Bullock Dike as shown on **Appendix 5-2 Obstacle Crossing Register (Revision 3)** [document reference 7.5.2]. As identified in **Appendix 18-9 Water Voles and Otters Report (Revision 2)** [document reference 7.18.18.9], water vole evidence was recorded several hundred meters from these haul road crossing points, towards the east. At this distance it would be considered too far to be considered a source of disturbance to the species. However, as water voles are highly mobile, pre-commencement surveys would be carried out to allow for any change on species distribution to be captured and appropriate licence obtained and / or mitigation measures as outlined in section 1.6.3.4 to be implemented as necessary.
116. If water vole presence is confirmed during the pre-construction surveys the following measures would be considered. Based on that assumption, it is envisaged that dissuasion techniques (e.g. strimming of vegetation to encourage water voles to move out from the working area) and exclusion fencing would be used to ensure water voles are not harmed by the proposed works. Displacement works are recommended to be carried out between February and April and where sufficient available alternative habitat exists. Regular repeat strimming would be undertaken to maintain the habitat's unsuitability for water voles.
117. An emergency procedure will be implemented by site workers if otters are unexpectedly encountered. All work within 30m will cease until advice has been provided by a suitably qualified ecologist.
118. Trapping and translocation of water voles, if required, should be completed between February and April and under a Natural England licence. A suitably qualified ecologist would be responsible for ensuring a Natural England licence application is submitted to Natural England prior to the commencement of works in accordance with requirement 23 of the **Draft DCO (Revision 5)** [REP-005]. A works-free buffer zone of at least 15m would be established around watercourses supporting water voles until a Natural England licence has been obtained.

119. A licence application would be informed by any prior surveys and would contain a detailed method statement and mitigation plan. Licenced works would be carried out under a water vole watching brief, supervised by the suitably qualified ecologist who holds the water vole licence.
120. A suitably qualified ecologist would be responsible for producing a licence return form and report of works carried out under licence. A copy of this form and report would be provided to Natural England and the relevant LPA as soon as reasonably practicable and as prescribed under the conditions of the Natural England licence.

1.5.3.5 Great Crested Newts

121. Due to the presence of GCN within ponds within the 250m buffer, it is likely that GCN would be encountered during the Works. Therefore, on site mitigation with individual Europe Protected Species Licences or District Level Licencing (DLL) for the species is required.
122. Fencing of the pond where GCN have been found within the Landfall Zone should be considered in order to prevent animals from entering work areas.
123. Natural England have confirmed that a District Level Licence (DLL) approach is satisfactory (Discretionary Advice Service response, 16/03/2022) and an application was submitted in March 2024. DLL is an alternative approach to EPS mitigation licence for developments which could affect great crested newts. District level licensing aims to increase the number of great crested newts by providing new or better habitats in targeted areas to benefit their wider population.

1.5.3.6 Reptiles

124. Suitable areas supporting reptiles adjacent to Onshore Development Area would be managed prior to the commencement of construction to deter or displace any reptiles which might be present within the working areas. Habitat management would involve the phased clearance of ground cover to create unfavourable conditions.

125. If habitat is cleared during the reptile hibernation period (which is typically between November and February inclusive, dependent on local weather conditions), then trees and scrub would only be cut to approximately 30cm above ground-level. This is to minimise the potential for disturbance to root balls where hibernating reptiles may be located. Remaining rough grass cover would be mowed short (approximately 5cm to 10cm above ground-level) and maintained at this height prior to clearance for construction works. This phased clearance would encourage reptiles to move away from the working area before ground clearance and construction works commence. This clearance will deter reptiles and reduce the requirement for the need for reptile fencing to be installed prior to the hibernation season.
126. The EMP would include details of measures to avoid killing/injury of reptiles during construction. No works (e.g. site clearance) likely to impact areas where reptiles are present would be undertaken, until required measures (e.g. displacement or exclusion, or capture and translocation, under supervision of the ECoW) are in place.
127. Habitat clearance during the active reptile season (e.g. between March and October, depending on local weather conditions) would commence either in the centre of the identified suitable habitat, progressively moving outwards, or from a side bordering suboptimal habitat, moving progressively towards more suitable habitat. This progression of clearance works through a site would enable any reptiles or other animals that may be present to leave the area and move to suitable habitat in the surrounding area. Scrub and tall grasses would be cut as above, to between 5cm and 10cm in height above ground level. All removed material would be removed from site within 24 hours, and any uprooting of vegetation or clearance of habitat of potential value to hibernating reptiles would be undertaken during the reptile active period.
128. Areas would be maintained in a condition not favoured by reptiles (e.g. with minimal ground cover) until the commencement of construction, through regular mowing of ground vegetation.
129. If habitat clearance for reptiles is to be undertaken during the breeding bird season, habitats of potential value to nesting birds would be surveyed as described above, allowing any active bird nests to be located.
130. A record of works will be maintained by the ECoW and a copy of this record will be made available to ERYC on request.

1.5.3.7 Invasive-non native Species

131. No Invasive non-native species of plants have been recorded within the Onshore Development Area, but should the situation change, and if deemed necessary, an INNS Management Plan would be developed for approval by the relevant stakeholders prior to the commencement of construction works. This plan will likely include the following measures such as:
- A plan of all INNS locations and extents;
 - A protocol for removing INNS and/ or managing the waste generated;
 - All machinery to be cleaned and inspected prior to working on the Onshore Development Area, as biosecurity measure to prevent to introduction of any INNS species;
 - Good site practice measures for managing the spread of INNS during works at watercourses; and
 - A requirement for an ECoW and details of their responsibilities with respect to INNS.

1.5.3.8 Other Small Mammals

132. Checks for the presence of hedgehogs, hares or other protected or notable species will be carried out by the ECOW prior to vegetation clearance.
133. Additional reasonable avoidance measures will be implemented/ mitigation licences applied for as necessary in accordance with DCO requirement 23 of the **Draft DCO (Revision 5)** [REP-005].
134. Should any other protected and/ or notable species that were scoped out (e.g. hazel dormouse) be found during the pre-construction and construction phases, works must stop immediately, and further advice sought from the ECoW team and/ or Natural England.

1.6 Construction Mitigation Measures

135. This section describes the ecological mitigation measures that would be undertaken during the construction phase of the development to ensure the protection of ecological receptors.

1.6.1 General Construction Measures

136. All construction would be undertaken in accordance with the EMP and **OCoCP (Volume 8, application ref: 8.9)**. Measures that would be specified in the OCoCP would include:
- All works would be carried out taking full account of legislative requirements and Environment Agency (EA) guidance;
 - All site induction and toolbox talks would include mitigation requirements;
 - Appropriate and adequate measures would be in place to ensure levels of dust are controlled to avoid effects on important ecological features;
 - Appropriate and adequate measures would be in place to minimise surface water flooding;
 - Noise and Vibration levels would be controlled to avoid effects on important ecological features;
 - Soils would be adequately stored to be reinstated and at suitable locations to avoid potential run-off into watercourses or surrounding retained habitats;
Heavy machinery would not be tracked over stored soils; and
 - Vehicle speeds would be restricted within the working corridor to reduce the likelihood of injury to wildlife species on site.
137. Night working is not scheduled as part of the normal construction working hours and may only be undertaken to maintain programme progress and for specific time critical activities (e.g. for long trenchless crossing operations). Where night working is unavoidable, or lighting is required for security/health and safety reasons, light fixtures would be directed towards working areas and away from adjacent or nearby habitats of value to protected or notable species. Any security lighting would be motion activated on short timers. Any such installations would be specified in the CoCP and inspected by the ECoW for compliance.

1.6.2 Habitats (Including Designated Sites)

138. All protective buffer zones described within Section 1.5 would be maintained throughout the construction phase. This would include the adherence and implementation of the protocols to manage the potential accidental release of lubricants, fuels and oils from construction machinery and HDD operations should there be a release/breakout of inert drilling fluids. As referenced in **Volume 7, Chapter 20 Flood Risk and Hydrology (application ref: 7.20)**, a Drilling Fluid Break Out Management Plan will be developed on appointment of a Principal Contractor(s).
139. The ECoW would monitor adherence to the requirements of the buffer zones a minimum of once every two weeks and would maintain a record of all findings and site checks undertaken. Should any breach of the requirements become evident, the ECoW would advise what remedial measures are required to be undertaken as soon as practicable to resolve the situation and minimise effects on ecology.
140. Trenchless crossings such as HDD would be used at the Landfall. Therefore, the maritime cliff and slope Priority Habitat is unlikely to be directly impacted by the HDD works. An emergency beach access may be required during construction and would be located to the north of Ulrome within an area of maritime cliff and slope habitat. Should the emergency access be required during construction, vehicles suitable to track on the beach would access the intertidal via a temporary access ramp and/ or ground protection matting shoreward of MHWS to avoid impacts on habitats. All intertidal habitats within the emergency beach access route will be retained but may be temporarily disturbed. Suitable ground protection matting will be used to safeguard the habitat when the temporary access to the beach is built and will be monitored throughout the construction period, expected to be up to 18 months.
141. Should any breach of the requirements become evident, the ECoW would advise what remedial measures are required to be undertaken as soon as practicable to resolve the situation and minimise effects on ecology. The ECoW will notify NE and ERYC of any changes to the proposed construction works.

1.6.2.1 Non-Statutory Designated Sites for Nature Conservation

142. Woodland LWS can be seen in **Volume 7, Figure 18-2 (application ref: 7.18.18.2)** and is to be completely avoided. All works associated with the Projects in principle are aimed to avoid woodland areas. Ancient woodland within Substation Zone would be avoided by design.

143. Although most impacts on the Nunkeeling Lane LWS would be avoided by the use of trenchless crossing techniques (such as Horizontal Directional Drill (HDD)), a small section would be affected by the construction of a temporary haul road crossing. If required, mitigation such as an appropriate buffer zone would be implemented at this location. The Haul Road design has been amended from the PEIR to avoid any direct impacts on this habitat, as stated in **Table 1-1**.
144. Similarly, trenchless crossing techniques would be employed at Beeford-Dunnington Road Verge Local Wildlife Site (LWS) but a short section of the LWS would be affected by the construction of a temporary haul road crossing. There will be additional mitigation measures that can be adopted to mitigate specific impacts following finalisation of the Onshore Export Cable Corridor and working practices. For LWSs this must include minimising any artificial lighting requirements of the nearby parts of the construction site, and/or careful design of any essential lighting nearby and agreed methodology of reinstatement of any sections directly affected by construction works with the ERYC and relevant stakeholders.
145. The Substation Zone has been designed to avoid direct impacts on Bentley Moor Wood LWS. All other LWSs would be protected using other mitigation measures including buffers and dust suppression techniques.
146. Full details of other mitigation measures would be set out in the final EMP and relevant construction specifications and drawings, including:
 - Details of the location, timing and method for trenchless crossing e.g. HDD, to avoid impacts to valued receptors at the Landfall and watercourse crossings (including the River Hull, Catfoss Drain, Meaux and Routh East Drain, Holderness Drain, Beverley and Barnston Drain, Catchwater Drain, Stream Dike and, Monk Dike). The locations of these can be found in **Volume 7, Chapter 18: Terrestrial Ecology and Ornithology (application ref: 7.18)**; and
 - Details of measures to manage pollution risk during construction would be set out in **Appendix D, Outline Pollution Prevention Plan** of the **OCoCP (Volume 8, application ref: 8.9)**.

1.6.2.2 Trees

147. A detailed tree survey of the whole Onshore Development Area was undertaken in early 2024 in accordance with the British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction, to inform the Preliminary Arboriculture Impact Assessment (AIA). The **Arboricultural Survey Report, Preliminary Arboricultural Impact Assessment and Outline Arboricultural Method Statement (Revision 2)** [AS-036] was submitted to the Examining Authority on the 8th November 2024. The preliminary AIA has not identified any ancient trees, ancient woodlands, veteran trees or protected trees that require removal in order to facilitate the Projects.
148. Mitigation and Compensation measures for known impacts are detailed in Section 5.3 and Section 6 of the **Arboricultural Survey Report, Preliminary Arboricultural Impact Assessment and Outline Arboricultural Method Statement (Revision 2)** [AS-036], the key measures include:
 - Compensatory tree planting;
 - Avoidance of Root Protection Areas (RPA) and Veteran Tree Buffer Zones;
 - Tree Protection Barriers around these trees' RPAs/Veteran Tree Buffer Zones;
 - Micro siting around Category A and B trees in addition to compensatory tree planting;
 - Micro siting Temporary Construction Accesses outside of RPAs to prevent soil compaction;
 - Sensitive design of road widening and location of passing places to avoid RPAs of Category A and B trees;
 - Sensitive design of road widening and location of passing places to avoid RPAs of Category A and B trees;
 - Sensitive design of trenchless crossings entry/exit point locations away from trees;
 - The provision of a final Tree Protection Plan (TPP) for the Onshore Substation Zone will form part of the final Arboricultural Method Statement to detail the specification and locations of tree protection measures to safeguard retained trees during construction activities;
 - The input of an Arboricultural Clerk of Works (ACoW) into proposed highway workswill form part of the final Arboricultural Method

Statement to ensure tree impacts are minimised in the detailed design; and

- An ACoW will be required during construction within the Onshore Cable Corridor to check tree protection measures, provide advice on avoiding impacts to trees and supervise works close to trees where necessary.

149. The Arboricultural Impact Assessment and Arboricultural Method Statement would be updated prior to construction to incorporate any changes to design if required.

1.6.2.3 Ancient Woodland

150. The main objective regarding Bentley Moor Wood ancient woodland and LWS which is within the Onshore Substation Zone, is to maintain and enhance the existing woodland both during the construction phase and in the long-term. Proposed measures include:

- protection of soils and roots within and surrounding woodland;
- manage threats such as invasive species;
- assess, manage and promote deadwood within the woodland;
- promote ancient woodland expansion by processes such as natural regeneration and supplementary planting following existing guidance;
- and stakeholder liaison (e.g. Forestry Commission and Natural England), if applicable;
- assess and manage impact of deer and grey squirrel on ancient woodland; and
- produce and implement a long-term woodland management plan (if non-existent).

151. This would assist in securing the long-term health of the ancient woodland, which would have benefits for local biodiversity, for the landscape, and visual screening of the proposed Onshore Converter Stations.

1.6.3 Protected and Notable Species

152. Construction measures in respect of protected and notable species would be implemented in accordance with the EMP.

1.6.3.1 Birds (Breeding and Wintering)

153. All works would be undertaken in accordance with the EMP and **OCoCP (Volume 8, application ref: 8.9)**. In the event that additional vegetation clearance is required in areas that are likely to support nesting birds, this would be undertaken outside of the bird nesting season (March to the end of August), or subject to inspection by the ECoW. If active birds' nests are found, these would be retained in situ until the ECoW confirms that breeding was completed, and the nest was no longer in use. The ECoW would advise on retention of an appropriate exclusion zone around the nest until this time.
154. That advice would be based on species type and sensitivity but would be at least 5m and marked out to prevent accidental disturbance (advice on the most appropriate technique for the species and location being provided by the ECoW).
155. A record of findings and measures undertaken will be maintained by the Site Manager and provided to the Environment Manager(s) and Site Manager(s).
156. Furthermore, should a Schedule 1 bird nest be encountered during works, then works will cease in that area and the ECoW will be consulted prior to works resuming. If the nest is active (as determined by the ECoW), Natural England will be consulted regarding appropriate mitigation if deemed necessary. This is likely to consist of a species-specific buffer zone that will be subject to agreement with Natural England and the ECoW. Works will not resume until after the young have fledged, and under the authorisation of a suitability qualified ecologist.
157. Where construction works are undertaken within suitable habitat or functionally linked habitat between November and January (weather and species dependent), a pre-construction survey will be undertaken to record the distribution and abundance of over-wintering birds and the distribution of suitable habitat likely to be affected during the winter season within which construction works will be undertaken. The findings of these pre-construction surveys will determine whether mitigation measures to reduce disturbance will be required. However, such mitigation measures may comprise pre-work habitat manipulation works to actively discourage bird species from using the fields where works are required and subsequently installing exclusion fencing to deter birds from the area as well as ensuring all lighting (if required) is only directed onto the construction works area.
158. Measures would be adopted to minimise noise, light and disturbance on identified breeding birds, such as visual screening (e.g. opaque fencing) where necessary.

159. Construction activities would be monitored by an ECoW or suitably qualified ornithologist, who would seek to ensure compliance with the Wildlife and Countryside Act 1981, e.g. by avoiding destruction of nests, eggs or young, and affording increased protection from disturbance to any Schedule 1 species of breeding birds.
160. Where breeding bird activity is recorded, construction works (excluding vehicle and personnel movements) may be halted immediately until a disturbance risk assessment is undertaken by a suitably qualified ecologist. The risk assessment would consider the nature of construction activity, likelihood of disturbance, and possible implications of the construction activities on the breeding attempt and set out measures to ensure that no disturbance occurs. Where it is determined that breeding birds are not likely to be affected, construction works will continue. Where it is determined that breeding birds may be affected, additional mitigation works would be implemented to prevent disturbance. Where, in the opinion of the suitably qualified ecologist, disturbance to nesting birds cannot be avoided by mitigation, construction works surrounding the area would be suspended until nesting is allowed to reach their natural conclusion without being disturbed or damaged.
161. Keeping the winter crop stubble within the arable land adjacent to the Works low during the bird breeding season (which is typically from March to August, although can commence earlier or later depending on the weather conditions) in order to minimise the chance of notable ground nesting birds nesting prior to work on arable land. If for any reason winter crop stubble is not kept low and should works commence within the bird breeding season (March - August inclusive), a pre-construction check for nesting birds would be undertaken at most 48 hours in advance of construction, and any nests identified would be protected and left undisturbed until the young have fledged.

1.6.3.2 Bats

162. All works affecting confirmed bat roosts (to include both roosts confirmed during pre-construction surveys and those confirmed during earlier surveys) would be undertaken in accordance with a Natural England Bat Mitigation Licence and EMP.

163. Should a bat roost be located during the construction period, works within 15m of the roost will be halted immediately and site workers will inform the ECoW as soon as practicable, either directly or through the Environmental Site Manager(s). Any potential construction lighting in nearby areas will be directed away from the roost site. Where possible the licensed ecologist will direct the installation of a woodcrete bat box in a suitable location on a mature tree located at least 15m from the works area, so that any disturbed bat(s) can relocate to this area. The use of bat boxes could be used on retaining features i.e. removing a dead branch with a natural feature and attaching it to another tree to allow more natural roost features to be retained at a similar height, location, and aspect allowing similar conditions to be replicated.
164. If the tree requires felling, a Natural England licence will be obtained prior to felling in accordance with requirement 23 of the **Draft DCO (Revision 5)** [REP-005]. Licences typically require felling to take place in/around October or April, to minimise the impact on any bats that might be present, details of felling methodology can be found in section 1.5.3.2.
165. In the unlikely event of a 'missed' tree roost being accidentally felled or disturbed, the ECoW will ensure that a Natural England bat licensed ecologist attends the site as soon as practicable. The bat licensed ecologist will ensure the section containing the roost is moved to a suitable safe and sheltered location, at least 15m from the works area and away from any potential obstructions that could prevent the exit of bats which may still be present. If required, the bat licenced ecologist will capture and relocate any disturbed bat(s) to a suitable alternative roost site, such as the pre-installed bat roost box. Alternately, if considered necessary, the bat(s) will be taken to a Natural England licensed handler who can monitor its recovery prior to release.
166. A record of findings and measures undertaken to protect any disturbed roosting bats will be maintained by the ECoW and provided to Environment Manager(s) and Site Manager(s). The ECoW will inform Natural England of the event and measures undertaken as soon as practicable. If a Natural England licence is required to continue the works, the ECoW will complete and submit an application, and works will not recommence until the licence has been obtained. Works would then be carried out in accordance with the licence and as necessary, under the watching brief of a Natural England bat licensed ecologist.

167. Within active construction areas, where removal of sections of hedgerows is required, moveable features (such as dead hedging, netting, fencing, containerised plants), will be employed on a nightly basis to ensure continuation of current commuting routes for commuting and/or foraging bats. This approach will only be applied to those hedgerows that have been recorded to provide high and moderate foraging/commuting habitat.
168. These will be in line with standard guidance and requirements and will be a consistent shape and size to the existing hedgerow. These will be moved into place at least one hour before dusk each day and removed no earlier than 30 minutes after dawn.
169. The majority of the habitats within the Onshore Development Area are of low suitability for foraging and commuting bats, with some parcels of woodland and hedgerows providing moderate habitat and connectivity to the wider landscape respectively (**Volume 7, Appendix 18-6 Bats Report - Monthly Activity Transects (application ref: 7.18.18.6)**).
170. In the event that additional trees or other features potentially suitable for roosting bats are identified that would be impacted by the works (e.g. if there was a previously unforeseen need to fell or manage a tree), the affected feature would be subject to appropriate survey/s by a suitably experienced/licensed bat ecologist.
171. In the case of each tree where the pre-construction surveys have categorised it as having Moderate or High potential for roosting bats but that follow-up surveys (e.g., emergence/re-entry surveys, tree climbing surveys etc.) have not confirmed a bat roost and that tree is required to be felled, then a soft-felling would be carried out as an additional precaution as detailed in section 1.5.3.2.
172. All permanent lighting will only operate when required and will be directional to avoid unnecessary illumination. All necessary lighting shall be designed to minimise light scatter (kept near or below the horizontal) and would be designed in accordance with the Guidance Note on Bats and Artificial Lighting (Bat Conservation Trust and Institution of Lighting Professionals, 2023) to minimise impact on foraging and commuting bats. Any changes to lighting requirements would need to be discussed and approved in advance with the ECoW.
173. Other measures that could be beneficial to bats during the construction phase would include:
174. Other additional mitigation measures would include:
 - Installation of bat boxes to suit a range of species and roost types;

- Retention of known roosting sites/ features if any are identified by pre-construction surveys, where possible i.e. removing a dead branch with a natural feature and attaching it to another tree to allow more natural roost features to be retained at a similar height, location, and aspect; and
- Veteranisation of suitable trees, particularly those that may be subjected to crown reduction or pollarding. Veteranisation is a process used to artificially create hollows and dead areas within the tree trunk and limbs to increase their potential to support bat species as well as other protected/ notable species.

1.6.3.3 Badgers

175. All measures in respect of badgers would be undertaken in accordance with the EMP and Natural England Licence to interfere with setts for development purposes (A24 and LR24). The need for a licence has not yet been determined by Natural England.
176. Where practicable, works-free buffer zones will be demarcated on site around areas of badger activity to ensure these are kept fully intact and with minimal interference from construction.
177. A mesh covering must be used on the topsoil storage in areas surrounding badger hotspots to ensure badgers in the vicinity do not dig into the soil storage area and create additional setts during the construction phase. In the worst case scenario, trenches would be open for six years. If further badger setts are identified more areas of topsoil storage will need to be meshed.
178. Night working will be avoided unless essential. Where night working may be required, lighting will be focussed on works areas and directed away from badger setts and areas of high potential value to foraging badgers (e.g. areas of rough grassland and woodland) (**OcoCP (Volume 8, application ref: 8.9)**). Lighting will be kept to a minimum, where it is located within 30m of an active badger sett.
179. The EcoW would undertake regular site inspections to confirm compliance with these measures. In the event that additional setts (or potential setts) are identified, either by the EcoW or site staff, all works within 30m of the potential sett would cease, until the EcoW had inspected the potential sett.
180. A report of findings of the site visit and implications for construction will be produced by the EcoW and provided to the Environment Manager(s) and Site Manager(s).

181. Any works likely to damage or disturb the newly identified sett would be subject to a Natural England Licence to interfere with setts for development purposes (A24 and LR24); no works would be undertaken within the 30m impact zone (or as otherwise advised by the EcoW), until the Licence was in place and all required measures (e.g. sett closure) implemented.
182. Between the months of March and October inclusive, where possible all works would be restricted to daylight hours only. Between November and February inclusive, works extending up to one hour after sunset or beginning up to one hour before sunrise would be permissible because above-ground badger activity (and activity of most small terrestrial animals) at this time of year is reduced.
183. All works traffic operating outside of the public highway would be restricted to speed limits in accordance with a transport assessment. This measure would reduce the risk of road traffic accidents of badgers (and other animals) with construction traffic.
184. Excavations left open overnight would be left with a battered (sloped) edge no steeper than 40° so that any animals which fall in can climb out rather than become trapped. Where this is not possible, ramps textured for grip with a slope no steeper than 40° should be installed (at intervals no greater than 20 metres for large excavations). All excavations would be visually checked by contractors to ensure no animals are present before the excavation is backfilled.
185. Night lighting of the construction site would be minimised or avoided entirely, particularly during the period from March to October inclusive. This should minimise disturbance to badgers and numerous other nocturnal and crepuscular species.
186. If construction works result in the death or injury of a badger, the appropriately experienced pre-approved ecologist will determine the cause of death where possible (through speaking to site workers, inspecting the body if possible, and investigating site conditions). If the death is considered likely to be a result of construction works the need for further mitigation measures such as the installation of badger exclusion fencing around working areas or the use of additional covering of excavations to prevent access into dangerous areas, will be assessed and determined.
187. Findings of the assessment and measures proposed will be reported to the Environment Manager(s) and Site Manager(s) as soon as practicable.

1.6.3.4 Otter and Water Vole

188. If otter/water voles are encountered during the works, then works within 15m of the relevant watercourse would cease, and the EcoW or suitably qualified ecologist contacted.
189. ECoW would assess the need for further mitigation measures including the requirement for a Natural England Licence prior to works re-commencing. Construction works would be carried out in accordance with the requirements of the Licence and under the guidance of the suitably qualified ecologist and, where necessary, an ecological watching brief.
190. If evidence of otter and water vole are identified during the pre-construction surveys, vegetation on the riverbanks should be retained, as these areas often act as shelter and ideal holt areas for otters. The following standard mitigation should be followed during construction:
 - Any pipes over 15 cm in diameter should be capped or sealed at the end of every working day to prevent otter from accessing;
 - Any holes or trenches which are left open overnight should be covered or have an exit ramp installed. The ramp may comprise a formed slope or wooden plank capable of supporting an otter at no steeper than 45 degrees. All areas should be checked at the beginning of the shift to ensure exit ramps are still intact and no otter have entered during the night;
 - During construction, all chemicals and materials to be used on Site should be safely and correctly stored and labelled, ideally within a bunded area and spill kits shall be made available on-site in case spills do occur;
 - An emergency procedure should be implemented by Site workers if otters are unexpectedly encountered. All work within 30m will cease until advice has been provided by a suitably qualified ecologist.; and
 - Works within 100m of a river shall not take place at night or within one hour of sunset and sunrise.
191. Additionally, all equipment used in the development that could potentially harm otters should be cordoned off at the end of each construction day by temporary fencing, to ensure otters are not injured if investigating the works site.

192. If working at night is undertaken within or adjacent to watercourses identified as suitable for otters and water voles, any lighting will be focussed on working areas and directed away from the watercourse and other watercourses of potential value to otters. Lighting will be kept to a minimum, up to approximately 100m from otter holts or other identified resting places.

1.6.3.5 Reptiles

193. Reptile mitigation would be implemented pre-construction in accordance with the EMP and section 1.5.3.6. In the event that reptiles are encountered during construction, the ECoW would be contacted, who would move the reptile to suitable retained habitat if possible and advise on additional measures that would be required to ensure killing/injury to reptiles was avoided.

1.6.3.6 Great Crested Newt

194. All works would be undertaken in accordance with the Natural England Great Crested Newt DLL, further details can be found within section 1.5.3.5.
195. If a GCN is located during construction, works in the area would cease immediately and the ECoW would be informed. To maintain the welfare of the GCN, a Natural England GCN licensed ecologist would attend the site to handle and where necessary, relocate any GCN to outside the working area and provide further ecological advice as to the way forward.
196. Suitable habitat is ploughed and therefore GCN are unlikely to be present. The use of fencing may be required, however further stipulations will be established within the agreed DLL conditions.

1.6.3.7 Invasive Non-Native Species

197. The main risks of INNS are associated with the transfer of INNS between watercourses or waterbodies. However, the majority of watercourse crossings are being undertaken using open cut techniques and there remains a risk of INNS transfer where works are undertaken in or near water.
198. Construction activities would be monitored by on-site workers to identify potential invasive species, as informed by toolbox talks. Should INNS be located within the works area, the following measures would be applied:
- To avoid disturbance and spread of INNS, where practical an exclusion zone would be created around INNS of at least 7m;
 - Signage would be erected to indicate the location of soils, materials or water contaminated with INNS;

- Vegetation clearance within areas of INNS would be undertaken by an appropriately qualified contractor, under the watch of the ECoW; and
 - Topsoil containing INNS would be managed separately and contained within restricted areas to avoid the spreading INNS to unaffected areas.
199. Construction practices would be implemented in accordance with an INNS Management Plan.
200. Measures would be set in place to minimise the potential for pollution from silt deposition into watercourses and from works vehicles, including measures to prevent transfer of invasive plant or animal species between watercourses.
201. All construction vehicles and machinery entering and leaving the working area(s) would follow the biosecurity measures of the GB Non-native Species Secretariat (NNSS) “check, clean, dry” guidance. In addition, the following biosecurity protocols would be adopted in all areas known to support INNS as a minimum:
- All vehicles arriving on site would be checked to ensure that they are clean and free from any INNS prior to entering the working area(s).
 - If soil or other material is imported to the working area(s), documentation from suppliers would be obtained to ensure it is free from INNS.
 - All footwear of construction workers would be inspected visually to ensure they are clean from soil and debris before entering and leaving the working area(s).
 - All vehicles would be kept clean, in particular removing any accumulated mud/material before entering and leaving the working area(s).
 - All facilities within working area(s) would be equipped with disinfectant to clean footwear/equipment/vehicles prior to entering and leaving the working area(s).
 - All removed material and/or disinfectant used to clean footwear/equipment/vehicles would be appropriately disposed of.
 - All access to working area(s) would be kept to a minimum and all vehicles and personnel would keep to maintained tracks, with vehicles parked within designated areas and/or hard standing.
 - Wherever possible, personnel and vehicles would avoid areas known to contain INNS.
202. The ECoW would undertake regular inspections of the work area to confirm the presence of INNS and adherence to required measures.

203. In the event that additional areas of INNS are identified the ECoW would review and update the INNS Management Plan to include these additional areas/INNS and their appropriate measures.

1.7 Post-Construction Mitigation Measures

204. This section describes the mitigation measures to be adopted as part of the Projects that will be undertaken as soon as practicable following the completion of the works. These measures will be to mitigate the impacts of development on features of ecological and nature conservation interest and to provide biodiversity benefit.
205. All post construction monitoring surveys would be undertaken by an appropriately experienced and where necessary, licenced ecologist(s).
206. All surveys would be undertaken in accordance with bio-security risk assessments and approved risk assessments would be in place prior to the commencement of any survey.

1.7.1 Habitats (Including Designated Sites)

207. Following the completion of construction in an area, cleared, damaged or disturbed habitats would be reinstated in accordance with the agreed specifications. New planting will be carried out in accordance with the **OLMP (Volume 8, application ref: 8.11)**, and **OCoCP (Volume 8, application ref: 8.9)**.
208. The final LMP will include details of planting methodologies and plant species lists. The ECoW will be responsible for producing a report to confirm habitat reinstatement have been carried out in accordance with the requirements of this EMP and the LMP.
209. Hedgerows would be replaced *in situ*. Replacement planting will comprise native shallow-rooting hedgerow species typical of the local area and existing landscape, planted as 40 – 60cm high whips (or larger), with suitable protection from grazing (**OLMP (Volume 8, application ref: 8.11)**).
210. To prevent future root damage to cables, no trees will be planted within the cable easement of the Onshore Export Cable Corridor. Locations for tree planting will be identified in the final LMP. Trees which are removed will be replaced with locally native species to match those removed, where feasible.

1.7.2 Protected and Notable Species

211. Where a Natural England licence for protected species has been obtained or identified to be required for construction works to be undertaken, the licence applications may include habitat restoration and enhancement measures for the benefit of the protected species that the licence applies to. These would be carried out by landscape contractors working under the guidance of a suitably qualified ecologist and/or licence holder.
212. The suitably qualified ecologist and/or Natural England licence holder would be responsible for producing any required Natural England licence return forms and report of the works undertaken. A copy of the forms and reports would be provided to Natural England and the relevant local planning authority as soon as reasonably practicable and as prescribed under the conditions of the Natural England licence.

1.8 Long-term Ecological Management

213. This section describes ecology measures to be adopted as part of the Projects that will be undertaken following the completion of post-construction mitigation described above.

1.8.1 Hedgerows

214. Reinstated hedgerows and enhanced hedgerows will remain under the management control of the landowner. Long-term management of new and retained/enhanced hedgerows are presented in the **OLMP (Volume 8, application ref: 8.11)**.

1.8.2 Habitats

215. During the establishment phase (three to five years following the planting or spreading of seed) any failed plants will be replaced ~~like-for-like~~ with the same species as first planted, as required to prevent any significant gaps in planting and as agreed with landowners. Once established, new planting will be managed in accordance with the **OLMP (Volume 8, application ref: 8.11)**. Should Natural England Licences be required for works to be undertaken, habitat management would be carried out in accordance with the requirements of these licences.
216. In the longer term, woodland within the Substation Zone will require regular maintenance to ensure that trees do not interfere with the operation and maintenance of the Projects.
217. Future enhancement would include thinning woodland and starting a coppicing process. Under a coppicing regime, cuts will be made on a cyclical rotation to ensure that the screening benefits are not compromised.

1.8.3 Protected Species

218. Where a Natural England licence for protected species has been obtained or identified to be required for works to be undertaken, the licence holders would be responsible for maintaining a record of all ecology works completed, which would be provided to Natural England and the relevant local planning authority as soon as practicable and as prescribed under the conditions of any Natural England licence in accordance with requirement 23 of the **Draft DCO (Revision 5)** [REP-005]. Should any Natural England licence for protected species be required, the licence holders (e.g. ECoW) will notify the Environmental Manager(s) of any additional survey and habitat requirements.

1.9 Biodiversity Enhancements

219. Details of the Biodiversity Net Gain commitments are presented in **Volume 7, Appendix 18-10 Biodiversity Net Gain Strategy (application ref: 7.18.18.10)**.
220. Enhancement and/or biodiversity net gain measures include, where appropriate, the incorporation of native planting species for hedgerows and woodland planting. Native woodland planting will follow an organic layout, incorporating a mix of shrub and tree species to form canopy layers and woodland edge which will maximise diversity structurally and for biodiversity. Further information is available in the **OLMP (Volume 8, application ref: 8.11)**.
221. Within the Onshore Substation Zone a combination of vegetated and unvegetated habitat types will be created. The unvegetated habitats will comprise the Onshore Converter Station, access roads and associated infrastructure and are anticipated to provide zero biodiversity value. Areas of vegetated habitat will seek to maximise on-site BNG opportunities. Habitats which are proposed within the **OLMP (Volume 8, application ref: 8.11)** include woodland, grassland, hedgerow and ephemeral waterbodies. Bentley Moor Wood ancient woodland and LWS would also be maintained and enhanced during the construction phase and in the long term maintenance period.
222. In addition, soil stockpiles related to areas of cropland habitat which will be reinstated within a two year period will be sown with native annual wildflowers. This is to provide temporary pollen and nectar rich resources and to provide flexibility with the reinstatement of the cropland habitats within a one-to-two-year period. As such, the reinstatement of these habitats' soils, within a maximum of two years, is considered temporary and can be carried out during suitable seasonal and weather conditions.

223. The detail behind these on-site provisions will be finalised and confirmed, pre-commencement, as part of a final updated pre-commencement Biodiversity Net Gain Strategy, **Appendix 18-10 Biodiversity Net Gain Strategy (application ref: 7.18.18.10)**.

1.10 Monitoring and Reporting

1.10.1 Reporting

1.10.1.1 Pre-Construction

224. The ECoW will maintain a record of all pre-construction surveys which are undertaken. The ECoW will be responsible for the production of the pre-construction survey reports for the species listed below, although this list is not exhaustive and additional surveys may be required (further information can be found within **Table 1-2**):
- Badger survey;
 - Bats (Ground Level Tree Assessment);
 - Ornithology overwintering bird survey;
 - Ornithology breeding bird survey; and
 - Riparian mammal survey.
225. Survey reports, including advice regarding implications for construction, will be provided to the Environment Manager(s) and Site Manager(s) and a copy will be made.
226. Should any Natural England licences be required, the ECoW will be responsible for the production of the Natural England licence applications which will be submitted to Natural England in accordance with requirement 23 of the **Draft DCO (Revision 5)** [REP-005]. Reports will support Natural England licence applications where required. Copies of the application will be provided to Environment Manager(s) and Site Manager(s).

1.10.1.2 During construction

227. The ECoW will maintain a record of all ecological work which is undertaken during the construction period, including any ecological watching briefs or protected species surveys and findings of any site visits. Reports will be provided to Environment Manager(s) and Site Manager(s) and where appropriate to [ERYC and](#) Natural England.
228. The ECoW will maintain a record of any breaches of the requirements and any measures undertaken to mitigate potential impacts of a breach. Records will be provided to Environment Manager(s) and Site Manager(s) and if necessary, [ERYC and](#) Natural England.

229. If any reasonable changes to the measures are considered necessary by the ECoW to achieve the objectives and adhere to the requirements of this OEMP and any relevant legislation, the ECoW will produce a report of these proposed changes, detailing the reasons for them, and this report will be provided to ERYC for approval prior to the measures being carried out on site.
230. Should a Natural England licence be required during the construction period, the ECoW will be responsible for applying for a licence. The ECoW and/or Natural England licence holder will be responsible for producing any required Natural England licence return forms and report of the works undertaken. A copy of the forms and reports will be provided to Environment Manager(s) and Site Manager(s), Natural England and ERYC as soon as reasonably practicable and as required under the conditions prescribed by the Natural England licence.

1.10.1.3 Post-Construction

231. Should any Natural England licences be required, the ECoW and/or Natural England licence holder will be responsible for producing and distributing any required Natural England licence return forms and report of the works undertaken.
232. The ECoW will be responsible for producing a report to confirm habitat reinstatement or enhancement requirements have been carried out in accordance with this plan and the LMP (see, **Volume 8, Outline Landscape Management Plan (application ref: 8.11)**).

1.10.2 Monitoring

233. The ECoW would be responsible for monitoring adherence requirements of the EMP during construction through:

- Weekly site inspections; and/or
- Weekly meetings with the Site Manager.

234. The ECoW would be present on site at the start of construction. From that period, the ECoW would monitor the extent of hedgerows lost during construction and record the following key features:

- Extent of clearance;
- Hedgerow composition; and
- Estimated age / maturity of hedgerow lost.

235. Findings from the hedgerow monitoring would be used to inform the Landscape Management Plan and if any updates are required based on the outcome of the hedgerow clearance.

- ~~234.~~236. The ECoW would regularly monitor adherence to the requirements of the protective buffer zones, at least once every two weeks. Should any breach of these requirements become evident, the ECoW would inform the Environment Manager(s) and Site Manager(s). The ECoW would inform the Site Manager of measures required to rectify any potential impacts. The Environment Manager would be responsible for notifying Natural England of any breaches to the buffer zones if necessary and as advised by the ECoW.
- ~~235.~~237. New planting would be monitored during the establishment phase by the Environment Manager's landscape contractor, landowner or farm manager, as agreed between all parties. Failed plants would be replaced (subject to agreement with landowners) ~~like for like~~with the same species as first planted, as required to prevent the development of a significant gap in planting. Post-construction monitoring of protected species as required under any potential Natural England licences would be undertaken by the ECoW or appropriately experienced and if necessary, licensed ecologist(s), who would be pre-approved by the ECoW.
- ~~236.~~238. Requirement 11 of the **Draft DCO (Revision 5)** [REP-005] requires that the success of planting will be monitored for five years after planting. During this period any plants which fail, die, are removed, or become seriously damaged or diseased, in the opinion of East Riding of Yorkshire Council, shall be replaced in the first available planting season with a specimen of the same species and size as that originally planted.
- ~~237.~~239. The purpose of the planting is to reinstate hedgerows removed to facilitate construction works, and to provide visual mitigation at the Onshore Substation Zone, as well as to deliver biodiversity net gain and benefit to the landscape of the area more generally (**OLMP (Revision 3)** [document reference 8.11]).
- ~~238.~~240. Populations of overwintering (October to February) and breeding birds (March to September) should be monitored throughout as it is possible there will be a change in population sizes over time. For example, overwintering bird roosts may increase in size, and new species may utilise the habitats within and surrounding the Onshore Development Area. The Projects in all scenarios must ensure that if populations change that, the mitigation is reassessed and altered where appropriate.
- ~~239.~~241. An ECoW will need to check for the presence, spread from adjacent land or introduction of any INNS during pre-construction surveys. If they arise within the Onshore Development Area, appropriate course of actions according to the species in question must be taken in order to control spread and/ or avoid establishment.

240.242. If EPS mitigation licenses for any species reviewed within this OEMP are obtained, then monitoring will be required as part of licence conditions. In most cases, the monitoring would be very focused, such as to the relevant trees (in the case of roosting bats where replacement bat roosting sites have been created) or the monitoring of newly constructed badger setts. Any monitoring requirements will be outlined within the relevant species' licences.

241.243. Should compensatory features be required for EPS as part of licence conditions, then ecological monitoring during, and post construction would be required in order to confirm the effectiveness of mitigation measures described above.

242.244. Post-construction monitoring of protected species as required under any potential Natural England licences would be undertaken by the ECoW or appropriately experienced and if necessary, licensed ecologist(s), who would be pre-approved by the ECoW.

243.245. The ECoW would be responsible for producing a report to the relevant local planning authority to confirm that all measures have been implemented in accordance with the EMP.

244.246. New planting would be monitored for up to ten years along the Onshore Export Cable Corridor, and for the operational life for planting at the Substation Zone (32 years). Failed plants would be replaced according to details given in the aftercare programme.

245.247. Should any Natural England licences be required, the ECoW and/or Natural England licence holder would be responsible for producing and distributing any required Natural England licence return forms and report of the works undertaken.

246.248. An ECoW will also undertake monitoring of the emergency beach access during construction to ensure the maritime cliff and slope priority habitat present is safeguarded and the habitat is not damaged.

1.11 Indicative Timetable of Suitable Works Period

247.249. **Table 1-4** provides an indicative programme outlining the optimal and optional months during which the works detailed in this document could be undertaken. **Table 1-3** sets out the key for interpretation of **Table 1-4**.

Table 1-3 Key for Table 1-4 Showing an Indicative Programme for Optimal Works Relating to Ecology

	Ecology works period (optimal time)
	Optional ecology works period (sub-optimal time)
	No ecology works

Table 1-4 Indicative Programme for Optimal Works Relating to Ecology and Nature Conservation

Work Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pre-construction												
Survey for breeding birds												
Survey for bat roosts/Ground Level Tree Assessment												
Survey for badger sett locations												
Badger survey activity												
Up-rooting of vegetation or clearance of materials of potential value to hibernating reptiles												
Habitat management to deter reptiles												
Applications for Natural England licences (should they be required)												

Work Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Construction												
Optimal period for clearance of hedgerows, scrub and trees												
Pre-clearance survey for nesting birds (should clearance not commence before nesting bird season)												
Clearance of hedgerows, scrub and trees, when pre-clearance surveys confirm no nests												
Post-construction												
Reinstatement and enhancement planting in accordance with the Landscape Scheme and Management Plan.												
Installation of bat boxes												
Long-term management												

Work Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Installation of bat boxes (post)												
Replanting of failed plants during establishment period (five years post planting).												

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