

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

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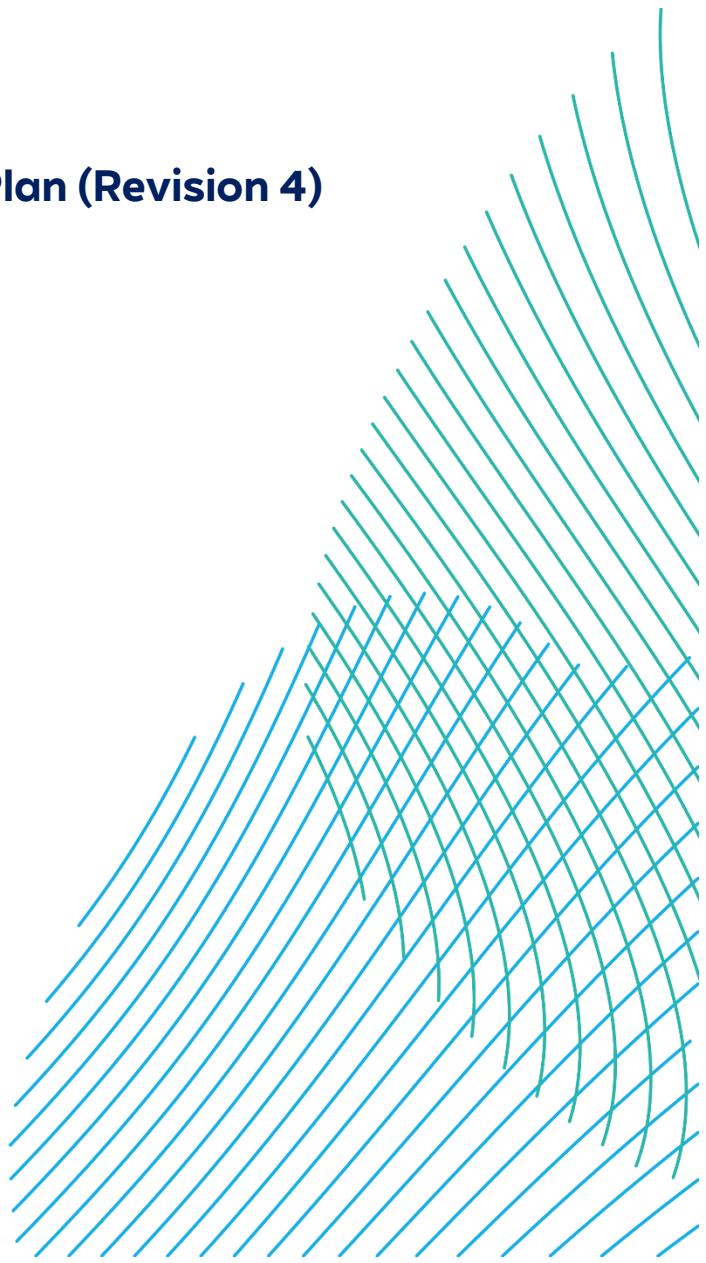
# **Dogger Bank South Offshore Wind Farms**

**Outline Landscape Management Plan (Revision 4)  
(Clean)  
Volume 8**

**April 2025**

**Application Reference: 8.11  
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Company:	<b>RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited</b>	Asset:	<b>Development</b>
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<b>Rev No.</b>	<b>Date</b>	<b>Status/Reason for Issue</b>	<b>Author</b>	<b>Checked by</b>	<b>Approved by</b>
01	June 2024	Final for DCO Application	RHDHV	RWE	RWE
02	November 2024	Submission in response to ERYC comments on the draft SoCG and updated arboricultural survey information.	RHDHV	RWE	RWE
03	February 2025	Submission for Deadline 2	LUC	RWE	RWE
04	April 2025	Submission for Deadline 4	LUC	RWE	RWE

Revision Change Log			
Rev No.	Page	Section	Description
01	N/A	N/A	Submitted for DCO Application
02	16, 18	1.5.2, 1.5.4	8.11 Outline Landscape Management Plan has been updated to reflect comments received from ERYC on the draft SoCG.  Clarification has been added to confirm that the SuDS design would be landscape-led.
02	11, 14, 18	1.3, 1.5.2, 1.5.4, 1.6	Reference to the 10.13 Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2) [AS-036 and AS-037] has been added.
03	10	1.2	Clarification has been provided on consultation with ERYC of the proposals to be included in the final LMP.
03	12	1.3	Existing landscape context has been updated to reflect revised calculations for total hedgerows and trees within the Onshore Development Area in line with amendments to <b>Chapter 18 Terrestrial Ecology and Ornithology (Revision 5)</b> [document reference 7.18 and the <b>Outline Ecological Management Plan (Revision 4)</b> [document reference: 8.10].
03	13	1.5.1	Additional wording has been provided regarding the replacement of trees within the Onshore Export Cable Corridor and Onward Cable Connection.
03	14	1.5.1	Additional detail has been provided on the of deciduous and non-deciduous trees.
03	15, 16	1.5.2	Reference to the <b>Outline Ecological Management Plan (Revision 4)</b> [document reference: 8.10] and protection measures for ancient woodland has been added. Minor grammatical and general wording changes have been completed.
03	17, 18	1.5.2	Additional wording has been added in relation to the SuDs design, along with reference to <b>the Outline Drainage Strategy (Revision 3)</b> [document reference 8.12]
03	16	1.5.2	Further detail of woodland planting between the Onshore Converter Stations and A164 has been added.
03	17, 18, 20	1.5.2, 1.5.4	Reference to <b>the Design and Access Statement (Revision 3)</b> [document reference: 8.8] has been added.

03	22	1.7.1	The <b>Outline Landscape Management Plan (Revision 3)</b> [document reference 8.11] has been updated to reference the long term management in addition to the five year monitoring.
03	23	1.7.2	The <b>Outline Landscape Management Plan (Revision 3)</b> [document reference 8.11] has been updated to include a commitment to planting management.
03	N/A	N/A	Document references throughout the <b>OLMP (Revision 3)</b> [document reference 8.11] have been updated to reflect the most recently submitted versions where relevant.
04	17 20	1.5.2 1.5.3	The <b>Outline Landscape Management Plan (Revision 3)</b> [REP2-031] has been updated in response to HE.1.35, as per <b>The Applicants' Responses to ExQ1</b> [REP2-31], to include reference to how landscape planting would be used to mitigate the effects on the scheduled monument and any objectives or principles on how this would be achieved.
04	12 24	1.2 1.7.1	The <b>Outline Landscape Management Plan (Revision 3)</b> [REP2-031] has been updated in response to LV.1.10, as per <b>The Applicants' Responses to ExQ1</b> [REP2-31], to clarify that an adaptive approach can be applied to the monitoring and management of the landscape planting.
04	12	1.2	The <b>Outline Landscape Management Plan (Revision 3)</b> [REP2-031] has been updated to include the principles given in the outline Landscape and Ecological Strategy for East Anglia Two [REP13-007] in response to LVI.1.11, as per <b>The Applicants' Responses to ExQ1</b> [REP2-31].
04	17	1.5.2	Paragraph 28 has been updated to confirm that options for additional planting will be explored at detail design stage, in response to REP3-037: LVI.1.3 [REP3-037]. Additional wording relating to maximising space for mitigation planting has been added to address ISH4 Action Point 20 [EV9-002].
04	20	1.5.3	Additional text has been added to make specific reference to advance planting during the construction stage in the south and east of the Onshore Substation Zone, in response to ISH4 Action Point 21 [EV9-002].

## Contents

1	Outline Landscape Management Plan .....	10
1.1	Introduction.....	10
1.2	Purpose of the OLMP.....	10
1.3	Existing Landscape Context.....	12
1.4	Predicted Landscape and Visual Effects .....	13
1.5	Illustrative Landscape Proposals.....	14
1.5.1	Landfall Zone, Onshore Export Cable Corridor and Onward Cable Connection to Proposed Birkhill Wood National Grid Substation.....	14
1.5.2	Onshore Substation Zone .....	15
1.5.3	Early Establishment .....	20
1.5.4	Biodiversity Net Gain .....	20
1.6	Indicative Species Mixes.....	21
1.7	Landscape Maintenance Recommendations .....	24
1.7.1	Establishment.....	24
1.7.2	Longer Term Management.....	25

## Tables

Table 1-1	Indicative Hedgerow Species .....	22
Table 1-2	Indicative Boundary Tree Species.....	22
Table 1-3	Indicative Woodland Species Mix .....	22
Table 1-4	Indicative Scrub Mix .....	23
Table 1-5	Indicative Maintenance Schedule for Years 1 to 5.....	26

## Glossary

Term	Definition
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Horizontal Directional Drilling (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossings other obstacles such as roads, railways and watercourses onshore.
Landscape Character Type	Distinct types of landscape that are relatively homogenous in character.
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.

Term	Definition
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).
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	The cable corridor between the Onshore Substation Zone and the Proposed Birkhill Wood National Grid Substation.
The Applicants	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).
Trenching	Open cut method for cable or duct installation.

## Acronyms

Term	Definition
AONB	Area of Outstanding Natural Beauty
DCO	Development Consent Order
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013)
HDD	Horizontal Directional Drilling
ILA	Important Landscape Area
LCA	Landscape Character Area
LCT	Landscape Character Type
LMP	Landscape Management Plan
LVIA	Landscape and Visual Impact Assessment
NCA	National Character Area
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
PRoW	Public Right of Way
SLVIA	Seascape, Landscape and Visual Impact Assessment
SSSI	Site of Special Scientific Interest
TJB	Transition Joint Bay

Term	Definition
ZTV	Zone of Theoretical Visibility

## 1 Outline Landscape Management Plan

### 1.1 Introduction

1. This document presents the Outline Landscape Management Plan (OLMP), which has been developed for the Projects, which comprises DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).

### 1.2 Purpose of the OLMP

2. The OLMP will form the basis for a final Landscape Management Plan (LMP), which will be prepared by the Principal Contractor, at the direction of the Applicants, and submitted prior to the commencement of the Projects for approval by the relevant planning authority (East Riding of Yorkshire Council).
3. Prior to submission of the final LMP to the planning authority, consultation will be undertaken with relevant officers at East Riding of Yorkshire Council to ensure that they are in agreement with the draft landscape proposals to be included within the final LMP. Any areas of disagreement that may arise will be resolved to the satisfaction of the Council prior to submission.
4. The **Draft Development Consent Order (DCO) (Revision 5)** [REP1-004] includes the following requirements:
  - 10.— (1)** No phase of the onshore works may commence until a written landscape management plan (which accords with the outline landscape management plan) for that phase has been submitted to, and approved by, the relevant planning authority.
  - (2)** Each landscaping scheme must include details of all proposed hard and soft landscaping works, including—
    - (a) surveys, assessments and method statements;
    - (b) location, number, species, size and planting density of any proposed planting;
    - (c) cultivation, treatment of materials and other operations to ensure plant establishment;
    - (d) proposed finished ground levels;
    - (e) details of existing trees and hedges to be removed and details of existing trees and hedges to be retained, with measures for their protection during the construction period where applicable and the details provided should be in accordance with British Standard 5837:2012 “Trees in relation to design, demolition and construction” and the Hedgerow Regulations 1997; and

(f) implementation timetables for all landscaping works, including proposals for reinstatement.

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

**(4)** Each landscape management plan must be implemented as approved.

**11.— (1)** All landscaping works must be carried out in accordance with a landscape management plan approved under requirement 10 (provision of landscaping) and in accordance with the relevant recommendations of appropriate British Standards.

**(2)** Any tree or shrub planted as part of an approved landscape management plan that, within five years after planting, is removed, dies or becomes, in the opinion of the relevant planning authority, seriously damaged or diseased, must be replaced in the next planting season with a specimen of the same species and size as that originally planted, unless otherwise agreed by the relevant planning authority.

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

5. The draft DCO requirement allows for each phase or stage of development to be accompanied by a different LMP, so that one single LMP covering all the works is not required before any onshore works can commence. The 'final LMP' referred to in this OLMP may therefore be developed as one or more documents.
6. Much of the detail set out in the above Requirements 10 and 11, such as method statements, number and location of plants, and timetables, will be included in the final LMP and are therefore not covered in this OLMP. This OLMP provides the framework to agree these details. It covers:
  - the soft landscape proposals (planting and seeding) around the Onshore Substation Zone; and
  - the replacement hedgerows and trees along the Onshore Export Cable Corridor.
7. This OLMP references the following documents:
  - **Volume 7, Chapter 23 Landscape and Visual Impact Assessment (application ref: 7.23);**
  - **Chapter 18 Terrestrial Ecology and Ornithology (Revision 5)** [document reference 7.18];
  - **Design and Access Statement (Revision 2)** [document reference 8.8];

- **Appendix 5-2 Obstacle Crossing Register (Revision 3)** [document reference 7.5.5.2];
  - **Tree Preservation Order and Hedgerow Plan (Revision 4)** [REP1-003]; and
  - **Outline Ecological Management Plan (Revision 4)** [document reference 8.10].
8. A more detailed LMP will be developed following consent. This will include full details of the proposed planting and other landscape treatments, in accordance with the finalised DCO requirements. Details of the LMP will be agreed with the East Riding of Yorkshire Council (ERYC), prior to construction. The final LMP will include:
- Details of tree and shrub planting, including details of species choice, size, location, as well as means of protection from grazing animals, and aftercare measures.
  - Details of how new trees and hedges will be protected against animals.
  - A process to deal with incidents of ash die back within the Onshore Substation Zone, including removal of diseased trees and re-planting of replacement native species (non-ash species).
  - Details of appropriate local provenance for plants and seed mixes which will be included within the specification.
  - Details of an adaptive planting monitoring and maintenance regime for the landscape treatments, including management of trees, hedgerows and grassland in both the establishment period and over the longer term.

## 1.3 Existing Landscape Context

9. The landscape context of the onshore works is set out in Volume 7, Chapter 23 Landscape and Visual Impact Assessment (application ref: 7.23).
10. The landscape of the Onshore Development Area is mainly arable (83.14%), with some areas of grassland (6.7%) and smaller areas of woodland (0.85%). Arable land in the Onshore Development Area is well defined by hedgerow field boundaries which provide habitat connectivity. The Onshore Development Area features a total of 17,560m of hedgerow and tree lines, of which approximately 4,160m of hedgerows qualify as “ecologically important” under the Hedgerow Regulations 1997.

11. The land is generally flat or very gently undulating, rising gradually in the west towards the Yorkshire Wolds. Broadleaved woodland within the area typically consists of a mix of ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*) and oak (*Quercus robur*). Plantation woodlands additionally contain sweet chestnut (*Castanea sativa*), Scots pine (*Pinus sylvestris*) and hazel (*Corylus avellana*). Further details of the trees within the Onshore Development Area are provided in the **Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2)** [AS-036]. The replacement of trees along the Onshore Export Cable Corridor and planting within the Onshore Substation Zone, in accordance with measures outlined in this OLMP, is in accordance with the results of the high-level tree survey and species recorded as found in the arboricultural assessment to ensure the replacement planting is compatible with the existing landscape context.

## 1.4 Predicted Landscape and Visual Effects

12. **Volume 7, Chapter 23 Landscape and Visual Impact Assessment (application ref: 7.23)** predicts significant effects on landscape character (moderate and major) during the operational phase of the Onshore Converter Stations due to the loss of landscape features and the change in character from open arable fields to two Onshore Converter Stations. Hedgerows that intersect with Onshore Converter Stations and access road will be permanently lost. This is expected to total 400m of native hedgerow within the Onshore Converter Station footprint and 31m of native hedgerow within the permanent access road to the Onshore Converter Stations. These effects will be localised, and effects on wider landscape character will reduce with distance, falling below the threshold of significance at no more than 1km from the footprints of the Onshore Converter Stations.
13. In terms of visual effects of the operational Onshore Converter Stations, significant visual effects are predicted for sensitive receptors at four viewpoints, viewpoints 1 to 4 (**Figure 23-7 to Figure 23-10 (Revision 3)** [document reference 7.23.1]), during the operational phase. These viewpoints represent higher sensitivity receptors within 1km of the Onshore Converter Stations.
14. These landscape and visual effects are assessed based on mitigation planting at year 1, when it is least effective. Once more matured (year 10), the mitigation planting will help provide additional screening of the Projects and the residual effect will be moderate (significant) for viewpoints 1, 2 and 3. The residual effect for viewpoint 4 will reduce to minor (not significant).

## 1.5 Illustrative Landscape Proposals

### 1.5.1 Landfall Zone, Onshore Export Cable Corridor and Onward Cable Connection to Proposed Birkhill Wood National Grid Substation

15. Where removal of trees and hedgerows is necessary to facilitate construction, these will be replaced. Replacement will take place as soon as is practicable (i.e. at the next planting season) after installation of the cable ducts within the Onshore Export Cable Corridor between the landfall and the Onshore Substation Zone, and Onward Cable Connection to the proposed Birkhill Wood National Grid Substation. The Projects commit to reinstating the landscape along the Onshore Export Cable Corridor and Onward Cable Connection to the proposed Birkhill Wood National Grid Substation within two years between Jointing Bays.
16. Hedgerows will be replaced in-situ. Replacement planting will comprise native shallow-rooting hedgerow species typical of the local area and existing landscape, planted as 40 – 60 cm high whips (or larger), with suitable protection from grazing.
17. To prevent future root damage to cables, no trees will be planted within the cable easement of the Onshore Export Cable Corridor or Onward Cable Connection to the proposed Birkhill Wood National Grid Substation. 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.
18. Indicative lists of locally appropriate native species that may be used are included in section 1.6. Species mixes will be developed further along with the detailed landscape proposals as part of the final LMP. Placement and selection of each species will depend on existing site-specific species, conditions and also livestock around the hedgerow such as horses.
19. All species mixes will be subject to approval by East Riding of Yorkshire Council prior to construction through the agreement of the final LMP. This will include a requirement for the appointed planting contractors to consider the source and plant stock where feasible and subject to supply chain. The aim will be to have approximately 30% of the species mix as non-deciduous, to provide screening, and the remaining 70% as deciduous species to reflect a typical balance of native woodland.
20. Where possible, the LMP will incorporate enhancement measures including:
  - Replacement of hedgerows to an improved ecological standard;
  - Inclusion of ground flora planting designed to encourage insect biomass;
  - Re-seeding of disturbed ground with native species rich seed mixes, pollen and nectar strips, and clover leys; and

- Removed hedgerows and trees will be replaced with hedgerows of a more diverse and locally native species composition than that which was removed.

## 1.5.2 Onshore Substation Zone

21. **Volume 7, Chapter 23 Landscape and Visual Impact Assessment (application ref: 7.23)** of the ES recommends that woodland and hedgerow planting be incorporated around the perimeter of the Onshore Substation Zone, in so far as service, access and maintenance restrictions allow. This will help screen or filter views of the Onshore Converter Stations and will help integrate them into the existing landscape. This is particularly important in relation to views from Bentley village to the south and Butt Farm to the north.
22. The LVIA also highlights the importance of retaining and protecting the existing woodland cover. This includes Bentley Moor Wood, which is within the Onshore Substation Zone and is ancient woodland. As outlined in the **Outline Ecological management Plan (OEMP)** (Revision 4) [document reference 8.10] Bentley Moor Wood ancient woodland and local wildlife site, would be maintained and enhanced as part of the Projects to assist in securing the long term health of the ancient woodland, which would have benefits for local biodiversity, for the landscape, and for visual screening of the proposed Onshore Converter Station(s). It also includes protection but not management of Eleven Acre Plantation and Johnson's Pit, which are outside but directly adjacent to the Onshore Substation Zone and therefore would not be directly affected by the construction or operation of the Onshore Converter Stations.
23. **Figure 23-6 (Revision 3)** [document reference 7.23.1] shows the indicative landscape mitigation plan for the Onshore Substation Zone. The following sections set out the key elements of the landscape proposals.
24. The Onshore Substation Zone mainly comprises arable fields. There will be some loss of hedges and a small number of field boundary trees as identified in **Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2)** [AS-036 and AS-037]. Mitigation which will minimise tree losses and reduce the severity of impacts to the health and longevity of retained trees is outlined in Section 6 of **Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2)** [AS-036 and AS-037].

25. The proposals for soft landscaping focus on the area around and within the Onshore Substation Zone. Retention of existing trees and vegetation is proposed wherever possible, including the hedgerow south of Butt Farm caravan site, and the whole of Bentley Moor Wood ancient woodland and local wildlife site. This area of ancient woodland will be protected, managed and enhanced throughout the construction works. Details of the mitigation and compensation required for identified arboricultural impacts as included in Section 5.3 of **Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2)** [AS-036 and AS-037]. Measures to secure the long-term health of the ancient woodland are included in the **Outline Ecological Management Plan (Revision 3)** [document reference: 8.10] . Together with Eleven Acre Plantation and the woodland at Johnson's Pit, which are outside the Development Area so do not form part of the Projects maintenance and enhancements of ancient woodland but these features will form the basis of a landscape framework around the Onshore Substation Zone.

26. The following general principles have been applied in developing illustrative landscape proposals for the Onshore Substation Zone:

- Landscape planting will provide visual mitigation around the periphery of the Onshore Substation Zone;
- Minimum clearance distances from fence lines, overhead power lines, and buried cables have been applied in accordance with relevant technical guidance;
- Where feasible, land will be returned to agricultural use to maintain the predominantly farmland character of the landscape;
- Native woodland planting will follow an organic layout, incorporating a mix of herb, shrub and tree species to form canopy layers and woodland edge;
- The landscape proposals and planting mixes are informed by the trees and vegetation already present in the local area;
- Evergreen tree species will be minimised and kept to the outer edges of woodland blocks, with the rest of the woodland a mix of UK native species; and
- Hedgerows will comprise a species-rich mix of native plants.

27. Key constraints on the landscape plan include:

- A high-pressure gas pipeline that runs east-west to the south of the Onshore Converter Stations;
- A high-pressure ethylene pipeline that runs parallel to the gas main;

- A water main that runs north-south to the east of the Onshore Converter Stations;
- The proposed onshore cables that will run along the west and south sides of the Onshore Converter Stations; and
- The proposed 400 kV connection, that will run along the north side of the Onshore Converter Stations.

28. Planting of trees has been avoided within the indicative areas for the onshore cables and 400kV connection. It is assumed that planting hedges over these features will be acceptable. Post-consent, consideration will be given to the precise location of export cables in the north-west of the Onshore Substation Zone, where the permanent access enters the site. Where practicable, opportunities will be sought to lay export cables underneath the area to be occupied by the access road. This would help maximise space for the planting of trees and hedgerows in the north-west of the Onshore Substation Zone. However, it should be noted this may not be possible given the number of cables to be installed and the requirements to space them appropriately. Once the location of the export cables is known, it will be possible to revisit landscape planting in this area. Additional planting which could be provided would be limited to areas of Freehold Acquisition and Acquisition of Rights, as shown on the **Land Plans (Revision 2)** [PDA-004], but includes:

- Extending the proposed northern woodland plantation to meet the eastern side of the access road; and/or
- Adding tree planting within the hedgerow along the access road.

29. Planting of trees within 6m of the pipelines has also been avoided. It is assumed that planting hedges over these features will be acceptable, subject to consultation with the owners of these assets.

30. The main areas of woodland planting are as follows:

- To the north, either side of the existing hedgerow, to provide a substantive area of screening between the Onshore Converter Stations and Butt Farm and the Anti Aircraft Battery (scheduled monument);
- To the east, to provide layers of screening between the Onshore Converter Stations and the A164 and the wider landscape. This will comprise:
  - Native woodland planting around the SuDS feature alongside the Onshore Converter Stations (noting that the SuDS feature is shown as an indicative area. Further details on the SuDS design is included in **Outline Drainage Strategy (Revision 3)** [document reference

8.12] and in the **Design and Access Statement (Revision 2)** [document reference: 8.8]);

- Enhancement of riparian planting along the watercourse running east from the SuDS feature;
- Enhancements to Bentley Moor Wood including additional native woodland planting; and
- Native woodland planting along the eastern boundary of the Onshore Substation Zone, close to Rose Villa.
- To the south, along the southern boundary, to provide a substantive area of screening between the Onshore Converter Stations and Bentley village. Due to presence of high pressure gas pipelines, the location of the planting is removed from the Onshore Converter Station, but this means it will be closer to the receptors, thereby becoming more effective at an earlier stage. Illustrative sections are provided in **Design and Access Statement (Revision 2)** [document reference: 8.8]; and
- Where practical, advance landscape mitigation planting would be established as early as reasonably practicable in the construction stage. This will allow planting to become more effective at an earlier stage (see section 1.5.3).

31. Along these and other boundaries, new hedges will be established to define woodland edges, and to provide further visual containment and integration. The western boundary of the Onshore Substation Zone will comprise a double hedgerow to maximise biodiversity net gain as outlined in the Biodiversity Net Gain Strategy (**Volume 7, Appendix 18-10 (application ref: 7.18.18.10)**).

32. In addition, opportunities will be explored to deliver offsite planting within the wider area (e.g., 2km). This could include additional hedgerow or tree planting to help strengthen the landscape structure of the area, as well as to deliver wider biodiversity net gain. Planting would need to be delivered by voluntary agreement with landowners. The Projects will seek opportunities to partner with relevant organisations, such as the Humber Forest, in delivering offsite landscaping.

33. The landscape plan also seeks to integrate landscape treatment with the proposed drainage attenuation basin to the south-east of the substation. The detail of the landscape treatment in this area will be developed in the final LMP based on the final design of the drainage works. The SuDS design, set out in the **Outline Drainage Strategy (Revision 3)** [document reference 8.12] would be approached in a landscape-led manner. Landscape professionals would work collaboratively with the SuDS engineers to produce a design which maximises landscape benefits. The detailed design would be progressed at to best integrate the SuDS into the landscape and provide enhanced ecological benefits, where possible.
34. Although the SuDS design set out in section 1.5.7 of the **Outline Drainage Strategy (Revision 3)** [document reference 8.12] and shown on drawing ED13554-GE-1100, in Appendix A of the report shows a single and uniformly shaped pond, it is the Applicants intention that this would be designed into a number of smaller more naturalistic swales or ponds which will be agreed with the ERYC as part of the drainage design and landscape management plan, at the detailed design stage. This is secured by Requirements 10 and 16 of the **Draft DCO (Revision 5)** [REP1-004 and REP1-005]. An illustrative and indicative example of a SuDS design is included in the **Design and Access Statement (Revision 2)** [document reference: 8.8].
35. An area to the south of the Onshore Converter Stations, within the proposed screen planting, and areas to the south and east of Bentley Moor Wood, will be returned to agricultural use following completion of the works. Agricultural accesses to these areas will be maintained.
36. Other areas within the Onshore Substation Zone where no planting is proposed will be seeded with species-rich grassland mixes or will be retained under agricultural use with appropriate access provided.
37. Indicative species mixes have been developed that are locally appropriate and that will deliver the necessary screening function in order to mitigate the effects as predicted in the LVIA (**Volume 7, Chapter 23 Landscape and Visual Impact Assessment (application ref: 7.23)**). Indicative mixes have also benefited from input by the project ecologists. These mixes will be developed along with the detailed landscape proposals as part of the final LMP. All species mixes will be subject to approval by East Riding of Yorkshire Council prior to construction of the connection works.

## 1.5.3 Early Establishment

38. Where practical, landscape mitigation planting will be established as early as possible in the construction phase. It is proposed that the area of planting along the southern boundary of the Onshore Substation Zone, and planting along the eastern boundary, including around Bentley Moor Wood will be established at the commencement of construction works. This will ensure that planting delivers effective mitigation for receptors in Bentley as early as possible.
39. In addition, it is proposed that the area of woodland planting along the northern boundary of the Onshore Substation Zone is established at the commencement of construction works. This area (to the north of the existing hedgerow) is not expected to be disturbed during construction, and the early establishment of planting would provide increased screening from Butt Farm, the Butt Farm camping site, and the Anti Aircraft Battery at Butt Farm.
40. It is considered that there is sufficient distance between the main area of construction works (Onshore Converter Stations and cable corridor) and these proposed areas of planting in the north, south and east to allow the planting to be established early without being disturbed by other construction related activities.
41. Other opportunities for early landscape planting will be subject to the extent and timings of construction works, and will be explored and agreed with East Riding of Yorkshire Council before commencement of construction.

## 1.5.4 Biodiversity Net Gain

42. Biodiversity net gain opportunities will be incorporated into the landscape mitigation measures where possible as outlined in the Biodiversity Net Gain Strategy (**Volume 7, Appendix 18-10 (application ref: 7.18.18.10)**).
43. 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.

44. Landscape treatments around the Onshore Substation Zone boundaries will be designed to provide visual mitigation and integration of the structures into the landscape as well as contributing towards the biodiversity net gain opportunities. New woodland planting to the north and south of the Onshore Converter Stations, and the expansion of existing woodland to the east will involve an organic layout which mimics canopy layers found in the wider countryside. This will help integrate the planting into the wider landscape and contribute towards improving the ecological quality of the area. Although evergreen species are required for screening purposes, such species (e.g., Scots pine) will be focussed along the outer edges of the woodland, with native species forming the majority of the interior woodland. This is to ensure the woodland contributes to and enhances the local landscape character, and provides greater biodiversity benefits.
45. The new hedgerow along the western boundary of the Onshore Substation Zone will be double width, allowing the canopies to interlink and create a sheltered corridor of habitat to benefit biodiversity. This corridor will provide an important connection between the existing blocks of woodland to the west of the Onshore Substation Zone.
46. A sustainable drainage system attenuation feature will be located in the east of the Onshore Substation Zone. It will be designed to mimic a natural water feature in the landscape, and incorporate species and habitats to maximise biodiversity net gain, such as reeds. The SuDS design would be approached in a landscape-led manner, as set out in the updated **Design and Access Statement (Revision 2)** [document reference 8.8].
47. Further details on the requirement for arboricultural mitigation are outlined in Section 6 of **Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2)** [AS-036 and AS-037].

## 1.6 Indicative Species Mixes

48. This section presents indicative species mixes for the different landscape planting types being proposed. Trees which are removed will be replaced with locally native species to match those removed. Tree species which would be removed are outlined in **Arboricultural Survey Report and Preliminary Arboricultural Impact Assessment (Revision 2)** [AS-036 and AS-037].
49. Species mixes will be developed along with the detailed landscape proposals as part of the final LMP. All species mixes will be subject to approval by East Riding of Yorkshire Council prior to construction of the works.

50. The size and maturity of planting stock will be considered in terms of availability, reliability and the level of screening provided, noting that whips tend to establish better than larger specimens. There may be potential for hedgerow trees to be planted at larger sizes. Detail will be provided in the final LMP.

Table 1-1 Indicative Hedgerow Species

Latin name	Common name
<i>Crataegus monogyna</i>	Hawthorn
<i>Corylus avellana</i>	Hazel
<i>Ilex aquifolium</i>	Holly
<i>Lonicera periclymenum</i>	Honeysuckle
<i>Prunus spinosa</i>	Blackthorn
<i>Rosa arvensis</i>	Field rose
<i>Rosa canina</i>	Dog rose
<i>Viburnum opulus</i>	Guelder rose

Table 1-2 Indicative Boundary Tree Species

Latin name	Common name
<i>Acer campestre</i>	Field maple
<i>Alnus glutinosa</i>	Alder
<i>Tilia cordata</i>	Small-leaved lime
<i>Quercus robur</i>	Oak

Table 1-3 Indicative Woodland Species Mix

Latin name	Common name
<i>Acer campestre</i>	Field maple
<i>Alnus glutinosa</i>	Alder

Latin name	Common name
<i>Betula pendula</i>	Silver birch
<i>Corylus avellana</i>	Hazel
<i>Euonymus europaeus</i>	Spindle
<i>Ilex aquifolium</i>	Holly
<i>Malus sylvestris</i>	Crab apple
<i>Pinus sylvestris</i>	Scots pine
<i>Prunus avium</i>	Wild cherry
<i>Quercus robur</i>	Oak
<i>Sorbus torminalis</i>	Wild Service Tree
<i>Viburnum opulus</i>	Guelder Rose

Table 1-4 Indicative Scrub Mix

Latin name	Common name
<i>Corylus avellana</i>	Hazel
<i>Euonymus europaeus</i>	Spindle
<i>Malus sylvestris</i>	Crab apple
<i>Prunus padus</i>	Bird cherry
<i>Viburnum opulus</i>	Guelder Rose

## 1.7 Landscape Maintenance Recommendations

### 1.7.1 Establishment

51. Requirement 11 of the **Draft DCO (Revision 5)** [REP1-004] requires that the success of planting will be monitored for five years after planting, with the exception of the planting at the Onshore Substation Zone, which must be maintained for the lifetime of the authorised development (see section 1.7.2). 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.
52. 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. Maintenance activities will be undertaken in accordance with these purposes and will aim towards the establishment of dense, diverse hedgerows and naturalistic, species-rich woodland.
53. During the five-year maintenance period, or longer for the Onshore Substation Zone (see section 1.7.2), activities will be carried out in accordance with the indicative Maintenance Schedule provided in **Table 1-5**. An adaptive approach to maintenance will be adopted, whereby monitoring of establishment against agreed objectives will inform the maintenance activities required. Management actions are targeted to specific areas of planting, and where necessary establishment periods can be extended, to deal with any unsatisfactory growth.
54. Maintenance activities will be undertaken in accordance with the following, subject to any updates:
- BS4428: 1989 Code of practice for general landscape operations (excluding hard landscapes); and
  - BS8545: 2014 Trees: from Nursery to independence in the landscape – Recommendations.
55. In addition to the activities detailed in the Indicative Maintenance Schedule (**Table 1-5**), progress in vegetation establishment will also be monitored to make sure that an appropriate mosaic of woodland, grassland and scrub habitats develop. Litter, refuse and debris will be removed from site after every site visit.
56. At the end of the initial five-year maintenance period (or as otherwise agreed based on the adaptive monitoring programme), all stakes, ties and plant shelters will be removed from the planting area.

## 1.7.2 Longer Term Management

57. In the longer term, woodland within the Onshore Substation Zone will require management and regular maintenance to ensure its effectiveness as screening, and to ensure that trees do not interfere with the operation and maintenance of the project.
58. Beyond the five-year management period described in section 1.7.1, regular inspections (at least annually) will be required for signs of diseased trees, dangerous limbs or rot requiring removal.
59. Future management could include selectively thinning woodland, ground flora management measures, and potentially starting a coppicing process. Under a coppicing regime, cuts would be made on a cyclical rotation to ensure that the screening benefits are not compromised.
60. As the woodland matures it is important to identify and develop a plan of succession. The age structure will be diversified to benefit the widest range of wildlife, the highest level of resilience, and long-term effectiveness of screening.
61. Before completion of the five-year management period described in section 1.7.1, a scheme regarding the measures to be implemented during the longer-term maintenance period will be developed and agreed with East Riding of Yorkshire Council. All planting in the Onshore Substation Zone will be managed for the operational lifetime of the authorised development, approximately 30 – 32 years, to ensure that it continues to provide the necessary screening, landscape and biodiversity benefits for the lifetime of the Projects.

Table 1-5 Indicative Maintenance Schedule for Years 1 to 5

Activity	Months	Number of visits
<b>Year 1</b>		
Watering and monitoring to ensure soil is constantly moist during the growing season, particularly during the first month after planting/seeding	First month after planting and continuing through growing season	As required
Check and repair guards, stakes and ties	May and October	2
Weed control maintaining weed-free ground around the base of new plants	July and October	2
Replacing failed planting if necessary	October or November	1
Cutting of grassland areas	Every 6-8 weeks	4
<b>Year 2</b>		
Check and repair guards, stakes and ties	May and October	2
Weed control maintaining weed-free ground around the base of new plants	May and August	2
Removal of undesirable species	May	1
Overseeding (If necessary)	April or September	2
Replacement of failed planting	October or November	1
Cutting of grassland areas	March and August	2
<b>Year 3</b>		
Weed control maintaining weed-free ground around the base of new plants	May and August	2
Removal of undesirable species	May	1
Replacement of failed planting	October or November	1
Cutting of grassland areas	March and August	2

Activity	Months	Number of visits
Cut hedgerow down to 2m height	October or November	1
<b>Year 4</b>		
Weed control maintaining weed-free ground around the base of new plants	May and August	2
Removal of undesirable species	May	1
Overseeding (If necessary)	April or September	2
Replacement of failed planting	October or November	1
Cutting of grassland areas	March and August	2
Cut hedgerows down to 2m height	October or November	1
<b>Year 5</b>		
Weed control maintaining weed-free ground around the base of new plants	May and August	2
Removal of undesirable species	May	1
Restocking of failed planting if required	October or November	1
Thinning if required	October or November	1
Cut hedgerows down to 2m height	October or November	1
Removal of guards, stakes and ties	October or November	1
Cutting of grassland areas	March and August	2

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