APPENDIX 6-1

BOTANICAL STUDY

Planning and Environmental Consultants

Botanical Study - Appendix 6-1

Proposed Slievegrine Renewable Energy Development, Co. Waterford

DOCUMENT DETAILS

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Contents

1. INTRODUCTION 3

1.1 Introduction 3
1.2 Methodology 3
1.2.1 Botanical Surveys 3
1.2.2 Irish Vegetation Classification (IVC)Assessment 4
1.2.3 Hedgerow Assessment 5
1.3 Statement of Authority 7

2. RESULTS 11

2.1 Turbine 1 11
2.2 Turbine 2 12
2.3 Turbine 3 14
2.4 Turbine 4 and Telecommunications Relay Mast 15
2.5 Turbine 5 16
2.6 Turbine 6 17
2.7 Turbine 7 19
2.8 Hedgerow 7A 20
2.9 Hedgerow 7B 22
2.10 Turbine 8 23
2.11 Hedgerow 8A 25
2.12 Hedgerow 8B 26
2.13 Hedgerow 8C 28
2.14 Turbine 9 29
2.15 Turbine 10 31
2.16 Hedgerow 10 32
2.17 Turbine 11 34
2.18 Turbine 12 35
2.19 Turbine 13 36
2.20 Turbine 14 38
2.21 Turbine 15 39
2.22 Hedgerow 15A 41
2.23 Hedgerow 15B 42
2.24 Turbine 16 43
2.25 Turbine 17 45
2.26 Hedgerow 17A 46
2.27 Hedgerow 17B 48
2.28 Hedgerow 17C 50
2.29 Turbine 18 51
2.30 Turbine 19 52
2.31 Turbine 20 53
2.32 Turbine 21 55
2.33 Turbine 22 56
2.34 Turbine 23 57
2.35 Proposed 110kV Substation and associated Construction Compound 59
2.36 220KV Loop-in Substation 60
2.37 Borrow Pit 1 61
2.38 Borrow Pit 2 62
2.39 Borrow Pit 3 64
2.40 Borrow Pit 4 65

2.41 Borrow Pit 5 67
2.42 Construction Compound 1 68
2.43 Construction Compound 2 70
2.44 Construction Compound 3 71
2.45 Construction Compound 4 73
2.46 Proposed Security Compounds 74
2.46.1 Security Compound within Improved Agricultural Grassland 74
2.46.2 Conifer Plantation 76

3. CONCLUSION 77

4. BIBLIOGRAPHY 78

1. INTRODUCTION

1.1 Introduction

MKO was commissioned to undertake detailed botanical surveys to provide an evaluation and assessment of the habitats occurring at the Site. The detailed assessments focus on the habitats occurring under or immediately adjacent to the Proposed Project footprint. Hedgerow assessments also focus on hedgerows within the felling buffer around Proposed Turbines. The Proposed 110kV Underground Cabling Route was not considered for the detailed botanical assessment, given that the route occurs predominantly within the existing built road surface.

1.2 Methodology

1.2.1 Botanical Surveys

Botanical surveys were undertaken on 27/08/2025, 28/08/2025, 05/05/2026, 06/05/2026 and 07/05/2026.

Detailed relevés were undertaken within the Proposed Project footprint or representative habitats within the Site. A total of 49 relevés were undertaken within the Site. Surveys on grassland habitats utilised a 2m x 2m relevé size as per O' Neill *et al.* (2018). Surveys of woodland utilised a 10m x 10m relevé size as per National Survey of Native Woodlands methodology (Perrin et al. 2008). The locations of all relevés are shown in Figure 1-1.

Habitats were assessed and described using both Fossitt (Fossitt, 2000) and the Irish Vegetation Classification (IVC) (Perrin et al., 2018) system. A representative photograph was also taken for each of the relevés recorded on site.

The botanical assessments described in this report have been undertaken with reference to the following guidelines and interpretation documents:

- Commission of the European Communities (2013) *Interpretation manual of European Union habitats*. Eur 28. European Commission DG Environment.
- Martin, J.R., O'Neill, F.H. & Daly, O.H. (2018), *The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats*. Irish Wildlife Manuals, No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H., Martin, J.R., Devaney, F.M. & Perrin, P.M. (2013), *The Irish semi-natural grasslands survey 2007-2012*. Irish Wildlife Manuals, No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2019), while mosses and liverworts nomenclature follow 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010). All surveys of vegetation were completed within the optimum period for vegetation surveys/habitat mapping, i.e., April to September in line with '*Best Practice Guidance for Habitat Survey and Mapping*' (Smith *et al.*, 2011)[1].

[1] *(Smith et al 2011). Best Practice Guidance for Habitat Survey and Mapping. Available at* https://www.heritagecouncil.ie/content/files/best_practice_guidance_habitat_survey_mapping_onscreen_version_2011_8mb.pdf

1.2.2 Irish Vegetation Classification (IVC)Assessment

Detailed habitat classification and assessment was undertaken by MKO at targeted locations within the Site, with relevés undertaken within representative habitats at each turbine base and associated Proposed Project infrastructure. IVC assessments were not carried out for relevés undertaken within Sitka spruce forestry plantation (WD4).

The survey results were then analysed in accordance the Irish Vegetation Classification (IVC) (Perrin et al., 2018) system. The IVC is a project with aims to classify, describe, and map in detail all aspects of natural and semi-natural vegetation in Ireland within a single, unified framework. The National Vegetation Database (NVD), upon which the IVC is based, holds data for over 30,000 relevés and is the core resource upon which the classification system is based.

A fundamental requirement of the IVC is to *"aid in definition and identification of EU Habitat Directive (92/43/EEC) Annex I habitats*" and to '*inform the planning process, for example through environmental impact assessments*'.

The Engine for Relevés to Irish Communities Assignment (ERICA)[2] is a web application for assigning vegetation data to communities defined by the Irish Vegetation Classification (IVC). Data can be uploaded, checked for errors and analysed and the results can then be downloaded. ERICA works with both quantitative vegetation cover data (such as are recorded in relevés and other types of botanical recording plots) and presence/absence data, such as species lists. ERICA covers grasslands, woodland, duneland, heaths, bogs, fens, mires, freshwater, saline waters, rocky habitats, scrub, strandline, saltmarsh and weed communities (Perrin *et al.*, 2018). The data collected from the botanical assessments was uploaded to ERICA, analysed and the results data downloaded.

The analysis procedure uses a clustering process to assign classification affinity to vegetation plots based on a degree of membership to each of the communities defined by the IVC. The table below details the categorizing types of plots utilising the clustering analysis. This categorizing procedure was utilised to determine if the grassland plots within the study area had any affinity to Annex I grassland and whether further assessment was required.

No Annex I habitats were recorded within the Site.

Table 1-1: Categorising types of plots using clustering analysis (after Wiser & de Cáceres, 2013).

Plot Type	Definition
Assigned	The plot has membership ≥ 0.5 for one of the vegetation communities and therefore relates to the core definition of that vegetation community.
Unassigned	The plot has membership ≥ 0.5 for the noise class and is poorly represented by the current classification scheme
Transitional	The plot has membership < 0.5 for all vegetation communities and for the noise class. It falls within the scope of the current classification scheme but does not relate to the core definition of any of the vegetation communities.

[2] *Perrin, 2019, ERICA – Engine for Relevés to Irish Communities Assignment V5.0 User's Manual, Online, Available at: https://biodiversityireland.shinyapps.io/vegetation-classification/_w_9cd4889a/manual.pdf, Accessed: 10.10.2020*

1.2.3 Hedgerow Assessment

Hedgerows within the Site were assessed using a method adapted from the Hedgerow Appraisal System (HAS, Foulkes et al., 2013). This methodology was used to record the extent (i.e. quantitative survey) of floristic composition, context, physical structure, condition, and management of hedgerows (i.e. qualitative survey) within the Proposed Project footprint with potential to be impacted (i.e. those hedgerows that fall within the bat felling buffers around each of the turbines and other associated infrastructure (turbine hardstand, road infrastructure etc.). Prior to the initial ecological site visit, all hedgerows identified within the Proposed Project footprint were mapped using landcover data from *Tailte Éireann's National Land Cover Map 2018 (*Lydon and Smith, 2018*)*. The hedgerows identified were also checked against the *1st Edition Ordnance Survey map (1841)* to identify whether they followed Townland Boundaries. Two definitions of hedgerows are used when applying the HAS. Murray and Foulkes (2006) define hedges or hedgerows as:

"Linear strips (4m wide or less) of woody plants with a shrubby growth form that cover more than 25% of the length of a field or property boundary that have been deliberately established or managed. They often have associated banks, walls, ditches (drains), or trees."

Hedges that have developed into lines of trees which no longer display a shrubby growth form (remnant hedgerows) are also considered for recording purposes. In order to maintain consistency with other habitat surveys in the Republic of Ireland, hedgerows meeting the following definition of Fossitt (2000) were also recorded (abbreviated):

Hedgerows WL1*: Linear strips of shrubs, often with occasional trees, that typically form field or property boundaries. Dimensions of hedgerows are taken here as being mainly less than 5m high and 4m wide. When wider or taller than this, or dominated by trees, the habitat should be considered as a narrow strip of scrub or woodland, or as a treeline -* ***WL2****. Some hedgerows may be overgrown or fragmented if management has been neglected, but they should still be considered in this category unless they have changed beyond recognition. Linear strips of low scrub are included in this category if they occur as field boundaries.*

Hedgerows were surveyed at 30m intervals and labelled with unique identifiers on Esri Fieldmaps and data on each hedgerow collected using a proforma set up on Survey 1,2, 3 database. The following attributes covered by the HAS Methodology (Foulkes *et al.,* 2013) were recorded for each 30m sample strip.

Context

Hedgerows were assessed by location, aspect, and surrounding environment, including adjacent land and habitat links. The purpose of recording these factors was to enable assessment of the potential significance of the surrounding landscape on hedgerow ecology and the structure of the hedge, as distinct from other influences such as management.

Construction

Each hedgerow's construction was determined by its linearity and features like drains, banks, and walls. These characteristics can be indicative of the period of hedgerow origin and are largely of a fixed nature and unlikely to change over time.

Structure and Condition

The structure relates to the physical dimensions of the hedge (height, width, cross sectional profile, quantity and age profile of trees). Condition was assessed by gaps, basal growth density (i.e. in the

bottom metre of the hedge), bank erosion and overall vigour. These attributes can vary significantly over time and, where repeat surveys are undertaken, can be the main indicators of quality and condition. Furthermore, by assessing trends, the long-term sustainability of the hedgerow can be determined.

Management

This covers the type and method of hedgerow management, including flailing, laying, coppice management, short- and long-term absence of management, and evidence of past management of the hedge.

Floristic Data

Species were recorded from the 30-metre strips. Hedgerows were categorised into three layers;

a) **Tree layer** - Hedgerow trees are any trees within the hedge that have been deliberately or incidentally allowed to grow, as distinct from the shrub layer of the hedge.

b) **Shrub layer** - The shrub (understorey) layer includes shrubs such as thorns, woody climbers and tree species that have a shrubby growth form, normally due to management such as cutting or laying.

c) **Ground flora** - This includes all herbaceous broadleaved plants, grasses, rushes and ferns found in the hedge bottom, some of which may be indicators of hedgerow age or origin (e.g. derived from scrub, old or ancient woodland). The list of ground flora species to be recorded followed that outlined in Appendix E of the HAS (Foulkes et al., 2013).

Hedgerow Significance

Following data collection, the appraisal system was used to identify hedgerows of historical, ecological, or landscape significance and assess their condition based on the recorded data. The system ranks hedgerows on a scale of 0 - 4 (0 being lowest) across five categories: Historical Significance, Species Diversity, Structure/Construction and Associated Features, Habitat Connectivity, and Landscape Significance. A score of 4 in any category indicates a hedgerow of high significance (Heritage Hedgerow). Hedgerows can also be classified as high significance if they score cumulative 6 or more in the Historical, Species Diversity, or Structural categories, or a total score of 16 or more across all five categories. These hedges should be prioritised for retention and management. Hedges with lower scores may still hold value depending on the context.

1.3 Statement of Authority

This appendix has been prepared by Julie Kohlstruck (B.Sc., M.Sc.) with support from David Mesarcik (B.Sc.). Julie is a Project Ecologist with 6 years' experience in ecological consultancy and has a wide breadth of experience undertaking habitat assessments and designed habitat managements plans for wind farm developments. She has undertaken habitat mapping, monitoring and condition assessments as part of planning conditions, Article 17 reporting and NPWS monitoring projects.

David is an Ecologist with MKO, he holds a Bachelor of Science (BSc) in Ecology and Evolutionary Biology as well as an Honours degree in Terrestrial Ecology from the University of Cape Town, in South Africa. Since joining MKO, David has carried out multidisciplinary walkovers including botanical surveys, carrying out detailed relevés of plant species and hedgerow appraisals. He has over three years' experience in undertaking habitat assessments in line with Fossitt (2000) and the Irish Vegetation Classification system.

This appendix has been reviewed by Rachel Walsh (BSc. Env., MCIEEM). Rachel is a Senior Ecologist with over 6 years' experience in professional ecological consultancy and is a full member of CIEEM with a First-Class Honours BSc in Environmental Science. Rachel has extensive experience in the undertaking of Irish Vegetation Classification surveys, Annex I habitat surveys, invasive species surveys, in scoping and leading ecological baseline surveys and in undertaking ecological impact assessments at the planning stage. She is also highly experienced in preparing and reviewing Appropriate Assessment reports, Ecological Impact Assessments and ecological inputs to Environmental Impact Assessment Reports. She has extensive experience in designing biodiversity and habitat management plans for a range of development and conservation-focused projects. She has worked across renewable energy, wastewater and transport infrastructure, extractive industry and residential development projects, and has acted as lead ecologist on numerous large-scale private and public-sector contracts

Field surveys were conducted by MKO ecologists Colin Murphy (BSc., MSc.), David Mesarcik (BSc), Ciara Hackett (BSc), Nora Szijarto (BSC., MSc.), Niamh Rowan (BSc.) and Emily Fair (BSc., MSc.). All surveyors have relevant academic qualifications and are competent in undertaking habitat and ecological assessments.

615000

590000

N

0 0.5 1 km

Map Legend

EIAR Site Boundary

Proposed Project footprint

Releve Locations

Proposed 220kV Loop-in Substation

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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N

SITE LOCATION - NOT TO SCALE

Drawing Title

Releve Locations

Project Title

Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	1-1a	1:12,500
Drawn By	Checked By	Date
AMcL	JK	05/10/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

615000

620000

N

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T14 T15 T16 T17

1 2 3 4 5

7A 7B 8A 8B 8C 15A 15B 17A 17B 17C

0 0.5 1 km

620000

Map Legend

- EIAR Site Boundary
- Proposed Project footprint
- Proposed Turbine Locations

Releve Locations

- Turbines
- Borrow Pit
- Security Compounds
- Construction Compounds
- Hedgerows

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

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N

SITE LOCATION - NOT TO SCALE

Drawing Title

Releve Locations

Project Title: Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	1-1b	1:12,500
Drawn By	Checked By	Date
AMcL	JK	05/10/2026

MKO
Email: info@mkoireland.ie/ Website: www.mkoireland.ie

615000

N

T13
T14
T18
T19
T20
T21
T22
T23
1
2
3
4
5

0 0.5 1 km

585000

615000

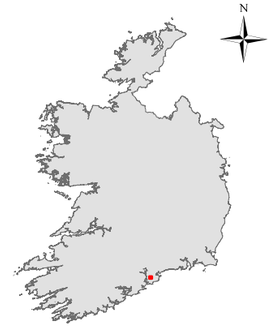
Map Legend

- EIAR Site Boundary
- Proposed Project footprint
- Proposed Turbine Locations

Releve Locations

- Turbines
- Borrow Pit
- Construction Compounds

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator



SITE LOCATION - NOT TO SCALE

Drawing Title

Releve Locations

Project Title

Proposed Slievegrine Renewable Energy Development, Co. Waterford

Project No.	Drawing No.	Scale
240740	1-1c	1:12,500
Drawn By	Checked By	Date
AMcL	JK	05/10/2026

Email: info@mkoireland.ie/ Website: www.mkoireland.ie

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2. RESULTS

2.1 Turbine 1

The Proposed Turbine T1 will be located in mature Sitka spruce conifer plantation (WD4) in the north of the Proposed Wind Farm site.

Table 2-1 Botanical Survey Results – Proposed Turbine T1

Relevé T1 (10m x 10m)	**Grid reference: X 19916 89514**	**Date 27/08/2025**
Species	**Common Name**	**% Cover**
Canopy Layer		
Picea sitchensis	Sitka spruce	70%
Shrub Layer		
N/A	*N/A*	*N/A*
Field Layer		
Circaea lutetiana	Enchanter's nightshade	1%
Dryopteris dilatata	Broad buckler fern	5%
Rubus fruticosus agg.	Bramble	5%
Ground Layer		
Leaf/ needle litter		35%
Thuidium tamarascinum		60%
Calliergonella cuspidata		5%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-1 Example of the receiving habitat at Proposed Turbine T1

2.2 Turbine 2

Proposed Turbine T2 will be located within a Sitka spruce conifer plantation (WD4), with the proposed hardstand located within an old fire break between blocks of conifer plantation that has been recolonised by *Molinia caerulea* within the north of the Proposed Wind Farm site.

Table 2-2 Botanical Survey Results – Proposed Turbine T2

Relevé T2 (10m x 10m)	Grid reference: X 20374 89589	Date 27/08/2025
Species	**Common Name**	**% Cover**
Canopy Layer		
Picea sitchensis	Sitka spruce	5%
Shrub Layer		
Calluna vulgaris	Ling heather	10%
Field Layer		
Molinia caerulea	Purple moor grass	95%
Potentilla erecta	Tormentil	5%
Ground Layer		
Kindbergia praelonga	Common feather moss	30%

Sphagnum papillosum	Papillose bog-moss	5%
Calliergonella cuspidata	Pointed spear moss	5%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-2 Example of the receiving habitat at Proposed Turbine T2

2.3 Turbine 3

Proposed Turbine T3 will be located in dense Sitka spruce conifer plantation (WD4) within the north of the Proposed Wind Farm site.

Table 2-3 Botanical Survey Results – Proposed Turbine T3

Relevé T3 (10m x 10m)	**Grid reference: X 20507 89136**	**Date 27/08/2025**
Species	**Common Name**	**% Cover**
Canopy Layer		
Picea sitchensis	Sitka spruce	60%
Shrub Layer		
N/A		
Field Layer		
N/A		
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	45%
Leaf/ needle litter		65%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-3 Example of the receiving habitat at Proposed Turbine T3

2.4 Turbine 4 and Telecommunications Relay Mast

Proposed Turbine T4 will be located in dense Sitka spruce conifer plantation (WD4), which is bordered to the northeast by improved agricultural grassland (GA1) fields within the north of the Proposed Wind Farm site.

The Proposed Telecommunications Relay Mast is located within the same block of conifer forestry, to the south of Turbine 4.

Table 2-4 Botanical Survey Results – Proposed Turbine T4

Relevé T4 (10m x 10m)	Grid reference: X 21015 89271	Date 27/08/2025
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	80%
Shrub Layer		
N/A		
Field Layer		
Molinia caerulea	Purple moor grass	25%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	60%
Calliergonella cuspidata	Pointed spear moss	20%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-4 Example of receiving habitat at Proposed Turbine T4

2.5 Turbine 5

Proposed Turbine T5 will be located in a mature Sitka spruce plantation (WD4) within the northeast of the Proposed Wind Farm site.

Table 2-5 Botanical Survey Results – Proposed Turbine T5

Relevé T5 (10m x 10m)	**Grid reference: X 21277 88974**	**Date 27/08/2025**
Species	**Common Name**	**% Cover**
Canopy Layer		
Picea sitchensis	Sitka spruce	95%
Shrub Layer		
N/A		
Field Layer		
N/A		
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	25%
Leaf/ needle litter		85%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-5 Example of receiving habitat at Proposed Turbine T5

2.6 Turbine 6

Proposed Turbine T6 will be located in an area of mature Sitka spruce plantation (WD4) with the proposed hardstand lying partially over an old forestry access track recolonised with dense gorse scrub (WS1).

Table 2-6 Botanical Survey Results – Proposed Turbine T6

Relevé T6 (10m x 10m)	Grid reference: X 21771 88984	Date 28/08/2025
Species	Common Name	% Cover
Canopy :Layer		
Picea sitchensis	Sitka spruce	35%
Betula pubescens	Downy birch	5%
Shrub Layer		
Ulex europaeus	Gorse	80%
Calluna vulgaris	Ling heather	15%
Field Layer		
Molinia caerulea	Purple moor grass	55%

Dryopteris dilatata	Broad buckler fern	5%
Potentilla erecta	Tormentil	5%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	30%
Calliergonella cuspidata	Pointed spear moss	10%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4) / Scrub (WS1)	
Affinity to Annex I habitat	No	



Plate 2-6 Example of receiving habitat at Proposed Turbine T6

2.7 Turbine 7

Proposed Turbine T7 will be located on an improved agricultural grassland (GA1) habitat dominated by perennial ryegrass, which is bordered by hedgerows (WL1) on all sides. There is a stone wall (BL1), running along the hedgerow to the west and south-southwest and a wet drainage ditch (FW4) along the hedgerow to the south-southwest of Proposed Turbine T7.

Table 2-7 Botanical Survey Results – Proposed Turbine T7

Relevé T7 (2m x 2m)	Grid reference: X 19391 87696	Date 27/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	45%
Holcus lanatus	Yorkshire fog	30%
Agrostis sp.	Bent grass (species)	10%
Trifolium repens	White clover	10%
Juncus effusus	Soft rush	10%
Rumex obtusifolius	Broad-leaved dock	5%
Ranunculus repens	Creeping buttercup	5%
Cerastium fontanum	Mouse-ear chickweed	2%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-7 Example of receiving habitat at Proposed Turbine T7

2.8 Hedgerow 7A

Table 2-8 Hedgerow Condition Assessment Results – Hedgerow 7A

Hedgerow ID:	Approximate Location:	Grid reference:
7A	W of Proposed Turbine T7	X 19315 87705
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, continuous, remnant hedgerow approx. 1.5 - 2.5 m high, following a Wall/Bank (<0.5m)
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Salix cinerea		**Grey willow**
Sorbus aucuparia		**Rowan**
Ground Flora Species Present:		
Species		**Common Name**

Rubus fruticosus agg.	Bramble
Species Diversity Significance*	
Hedgerow (Woody) Species Diversity:	**0 - Low Significance**
Ground Flora Species Diversity:	**0 - Low Significance**
Other Factors of Significance:	
Hedgerow follows Townland Boundary?	**Yes**

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-8 Hedgerow 7A located west of Proposed Turbine T7 at the centre of the Proposed Wind Farm site.

2.9 Hedgerow 7B

Table 2-9 Hedgerow Condition Assessment Results – Hedgerow 7B

Hedgerow ID:	Approximate Location:	Grid reference:
7B	**SSW of Proposed Turbine T7**	**X 19371 87635**
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, scrubby, remnant hedgerow approx. 2.5 - 4 m high, following a Wall/Bank (<0.5m) with ploughing/poaching up to base of hedge.
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Salix cinerea		**Grey willow**
Fuchsia magellanica		**Fuchsia (non-native)**
Ground Flora Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Species Diversity Significance*		
Hedgerow (Woody) Species Diversity:		**0 - Low Significance**
Ground Flora Species Diversity:		**0 - Low Significance**
Other Factors of Significance:		
Hedgerow follows Townland Boundary?		**Yes**

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-9 Hedgerow 7B located south-southwest of Proposed Turbine T7 at the centre of the Proposed Wind Farm site.

2.10 Turbine 8

Proposed Turbine T8 will be located on a patch of an improved agricultural grassland (GA1) habitat dominated by perennial ryegrass, which is bordered by stone walls (BL1) and overgrown scrubby hedgerows (WL1) composed of grey willow, hawthorn and gorse following field drains (FW4).

Table 2-10 Botanical Survey Results – Proposed Turbine T8

Relevé T8 (2m x 2m)	Grid reference: X 19847 87569	Date 27/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	50%
Holcus lanatus	Yorkshire fog	30%
Ranunculus repens	Creeping buttercup	40%
Trifolium repens	White clover	40%
Agrostis stolonifera	Creeping bent	10%
Juncus effusus	Soft rush	5%
Rumex obtusifolius	Broad-leaved dock	5%
Bellis perennis	Daisy	5%
Cirsium arvense	Creeping thistle	5%

Cerastium fontanum	Mouse-ear chickweed	2%
Taraxacum officinale agg.	Dandelion	2%
Urtica dioica	Nettle	1%
Jacobaea vulgaris	Ragwort	1%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-10 Example of receiving habitat at Proposed Turbine T8.

2.11 Hedgerow 8A

Table 2-11 Hedgerow Condition Assessment Results – Hedgerow 8A

Hedgerow ID:	Approximate Location:	Grid reference:
8A	E of Proposed Turbine T8	X 19881 87598
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, continuous, remnant hedgerow approx. 2.5 - 4m high, following a Wall/Bank (<0.5m).
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Salix cinerea		**Grey willow**
Ground Flora Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Galium aparine		Cleavers
Cirsium arvense		Creeping thistle
Ulex europaeus		Gorse
Stachys palustris		**Marsh woundwort**
Polystichum setiferum		**Soft shield fern**
Rumex obtusifolius		Broadleaf dock
Epilobium hirsutum		Willowherb
Species Diversity Significance*		
Hedgerow (Woody) Species Diversity:		**0 - Low Significance**
Ground Flora Species Diversity:		**1 – Slightly Significant**
Other Factors of Significance:		
Hedgerow follows Townland Boundary?		**Yes**

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-11 Hedgerow 8A located east of Proposed Turbine T8 at the centre of the Proposed Wind Farm site.

2.12 Hedgerow 8B

Table 2-12 Hedgerow Condition Assessment Results – Hedgerow 8B

Hedgerow ID:	Approximate Location:	Grid reference:
8B	SSE of Proposed Turbine T8	X 19875 87513
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, scrubby, hedgerow approx. 2.5 - 4 m high, following a Wall/Bank (<0.5m)
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Salix cinerea		**Grey willow**
Ground Flora Species Present:		
Species		**Common Name**

Rubus fruticosus agg.	Bramble
Galium aparine	Cleavers
Cirsium arvense	Creeping thistle
Ulex europaeus	Gorse
Species Diversity Significance*	
Hedgerow (Woody) Species Diversity:	**0 - Low Significance**
Ground Flora Species Diversity:	**0 - Low Significance**
Other Factors of Significance:	
Hedgerow follows Townland Boundary?	**Yes**

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-12 Hedgerow 8B located south-southeast of Proposed Turbine T8 at the centre of the Proposed Wind Farm site.

2.13 Hedgerow 8C

Table 2-13 Hedgerow Condition Assessment Results – Hedgerow 8C

Hedgerow ID:	Approximate Location:	Grid reference:
8C	SSW of Proposed Turbine T8	X 19810 87518
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Gappy, remnant hedgerow approx. 2.5 - 4 m high, following a drainage ditch.
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Salix cinerea		**Grey willow**
Ground Flora Species Present:		
Species		**Common Name**
Pteridium aquilinum		Bracken
Rubus fruticosus agg.		Bramble
Epilobium hirsutum		Willowherb
Ulex europaeus		Gorse
Urtica dioica		Nettle
Polystichum setiferum		**Soft shield fern**
Species Diversity Significance*		
Hedgerow (Woody) Species Diversity:		**0 - Low Significance**
Ground Flora Species Diversity:		**0 - Low Significance**
Other Factors of Significance:		
Hedgerow follows Townland Boundary?		No

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-13 Hedgerow 8C located south-southwest of Proposed Turbine T7 at the centre of the Proposed Wind Farm site.

2.14 Turbine 9

Proposed Turbine T9 will be located on wet grassland (GS4) dominated by soft rushes and bordered by mature stands of Sitka spruce plantation (WD4) to the east, south and southwest and surrounded by bracken / bramble scrub (WS1) to the north and west. There is a wet drainage ditch (FW4) flowing along the boundary with the conifer plantation.

Table 2-14 Botanical Survey Results – Proposed Turbine T9

Relevé T9 (2m x 2m)	Grid reference: X 20391 87562	Date 28/08/2025
Species	Common Name	% Cover
Juncus effusus	Soft rush	50%
Lolium perenne	Perennial rye	25%
Holcus lanatus	Yorkshire fog	15%
Ranunculus repens	Creeping buttercup	30%
Dactylis glomerata	Cock's-foot	10%
Cirsium arvense	Creeping thistle	10%
Pteridium aquilinum	Bracken	20%
Rubus fruticosus agg.	Bramble	10%

Ulex europaeus	Gorse	5%
Salix cinerea	Grey willow	2%
Fossitt (2000) Habitat Classification	Wet grassland (GS4)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland (Transitional 43.7%)	
Affinity to Annex I habitat	No	



Plate 2-14 Example of receiving habitat at Proposed Turbine T9

2.15 Turbine 10

Proposed Turbine T10 will be located on wet grassland (GS4) dominated by soft rushes and bordered by mature stands of Sitka spruce plantation (WD4) to the northeast and surrounded by remnant hedgerow (WD1) dominated by grey willow, gorse and bramble to the south and west. There is an old forestry road recolonised by gorse scrub (WS1) along the boundary with the conifer plantation.

Table 2-15 Botanical Survey Results – Proposed Turbine T10

Relevé T10 (2m x 2m)	Grid reference: X 20836 87106	Date 28/08/2025
Species	Common Name	% Cover
Juncus effusus	Soft rush	60%
Ranunculus repens	Creeping buttercup	2%
Lotus corniculatus	Bird's foot trefoil	25%
Lychnis flos-cuculi	Ragged-robin	2%
Alopecurus pratensis	Meadow foxtail	2%
Cardamine pratensis	Cuckoo flower	1%
Rumex acetosa	Common sorrel	8%
Ranunculus acris	Meadow buttercup	20%
Anthoxanthum odoratum	Sweet vernal grass	10%
Fossitt (2000) Habitat Classification	Wet grassland (GS4)	
IVC (Irish Vegetation Community classification)	GL2B - *Juncus effusus – Rumex acetosa* grassland	
Affinity to Annex I habitat	No	



Plate 2-15 Example of receiving habitat at Proposed Turbine T10

2.16 Hedgerow 10

Table 2-16 Hedgerow Condition Assessment Results – Hedgerow 10

Hedgerow ID:	Approximate Location:	Grid reference:
810	E of Proposed Turbine T10	X 20912 87097
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, continuous, remnant hedgerow approx. 2.5 - 4m high, following a Wall/Bank (<0.5m).
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Prunus spinosa		Blackthorn
Ulex europaeus		**Gorse**
Salix cinerea		**Grey willow**
Crataegus monogyna		**Hawthorn**
Ground Flora Species Present:		

Species	Common Name
Rubus fruticosus agg.	Bramble
Juncus effusus	Soft rush
Anthoxanthum odoratum	Sweet vernal grass
Holcus lanatus	Yorkshire fog
Ranunculus repens	Creeping buttercup
Rumex acetosa	Common sorrel
Rumex obtusifolius	Broadleaf dock

Species Diversity Significance*	
Hedgerow (Woody) Species Diversity:	**0 - Low Significance**
Ground Flora Species Diversity:	**0 - Low Significance**

Other Factors of Significance:	
Hedgerow follows Townland Boundary?	**No**

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-16 Hedgerow 10 located east of Proposed Turbine T10 at the centre of the Proposed Wind Farm site.

2.17 Turbine 11

Proposed Turbine T11 will be located in a mature Sitka spruce plantation (WD4) in the east of the Proposed Wind Farm site.

Table 2-17 Botanical Survey Results – Proposed Turbine T11

Relevé T11 (10m x 10m)	Grid reference: X 21383 87290	Date 28/08/2025
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	60%
Shrub Layer		
N/A		
Field Layer		
Dryopteris dilatata	Broad buckler fern	10%
Blechnum spicant	Hard fern	1%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	30%
Leaf/ needle litter		70%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-17 Example of receiving habitat at Proposed Turbine T11

2.18 Turbine 12

Proposed Turbine T12 will be located on improved agricultural grassland (GA1) habitat dominated by perennial ryegrass, to the east of the Proposed Wind Farm site, which is bordered by Sitka spruce plantation (WD4) to the north, west and east. There are wet drainage ditches (FW4) flowing along the boundaries with the conifer plantation and an EPA-mapped watercourse flowing along the field boundary over 200m to the west.

Table 2-18 Botanical Survey Results – Proposed Turbine T12

Relevé T12 (2m x 2m)	Grid reference: X 21917 87384	Date 28/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	90%
Trifolium repens	White clover	10%
Rumex obtusifolius	Broadleaf dock	0.5%
Ranunculus repens	Creeping buttercup	0.5%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL3B - *Lolium perenne* - *Trifolium repens* grassland (Transitional 46.6%)	

Affinity to Annex I habitat	No



Plate 2-18 Example of receiving habitat at Proposed Turbine T12

2.19 Turbine 13

Proposed Turbine T13 will be located in dense immature Sitka spruce conifer plantation (WD4) within the west of the Proposed Wind Farm site.

Table 2-19 Botanical Survey Results – Proposed Turbine T13

Relevé T13 (10m x 10m)	Grid reference: X 17958 87039	Date 27/08/2025
Species	Common Name	% Cover
Canopy :Layer		
Picea sitchensis	Sitka spruce	100%
Shrub Layer		
N/A		
Field Layer		
Dryopteris dilatata	Broad buckler fern	0.5%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	1%

Fossitt (2000) Habitat Classification	Conifer plantation (WD4)
Affinity to Annex I habitat	No



Plate 2-19 Example of receiving habitat at Proposed Turbine T13

2.20 Turbine 14

Proposed Turbine T14 will be located in dense Sitka spruce conifer plantation (WD4) within the southern section of the Proposed Wind Farm site.

Table 2-20 Botanical Survey Results – Proposed Turbine T14

Relevé T14 (10m x 10m)	Grid reference: X 18448 86994	Date 27/08/2025
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	100%
Shrub Layer		
N/A		
Field Layer		
Dryopteris dilatata	Broad buckler fern	1%
Ground Layer		
Hylocomium splendens	Glittering wood-moss	40%
Thuidium tamarascinum	Tamarisk moss	30%
Dicranum scoparium	Broom fork-moss	10%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-20 Example of receiving habitat at Proposed Turbine T14

2.21 Turbine 15

Proposed Turbine T15 will be located on improved agricultural grassland (GA1) habitat, which is bordered by hedgerows (WL1) to the northwest, southwest and southeast and a small patch of Sitka spruce conifer plantation (WD4) to the northeast. One of the hedgerows is dominated by non-native fuchsia, with occasional hawthorn and dense bramble understorey to the northwest of Proposed Turbine T15, while the rest are low, scrubby gorse hedgerows (WL1) that run along stone walls (BL1).

Table 2-21 Botanical Survey Results – Proposed Turbine T15

Relevé T15 (2m x 2m)	Grid reference: X 18958 87105	Date 27/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	50%
Holcus lanatus	Yorkshire fog	30%
Festuca rubra	Red fescue	10%
Ranunculus repens	Creeping buttercup	15%
Rumex obtusifolius	Broad-leaved dock	10%
Agrostis stolonifera	Creeping bent	5%
Trifolium repens	White clover	5%
Rumex acetosella	Sheep's sorrel	5%

Taraxacum officinale agg.	Dandelion	5%
Urtica dioica	Nettle	2%
Cirsium arvense	Creeping thistle	2%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-21 Example of receiving habitat at Proposed Turbine T15

2.22 Hedgerow 15A

Table 2-22 Hedgerow Condition Assessment Results – Hedgerow 15A

Hedgerow ID:	Approximate Location:	Grid reference:
15A	NNW of Proposed Turbine T15	X 18932 87137
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	David Mesarcik	Dense, continuous hedgerow approx. 1.5 – 2.5 m high, following a Wall/Bank (>1m).
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Fuchsia magellanica		**Fuchsia (non-native)**
Crataegus monogyna		**Hawthorn**
Ground Flora Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Galium aparine		Cleavers
Cirsium arvense		Creeping thistle
Dryopteris filix-mas		**Male fern**
Urtica dioica		Nettle
Polystichum setiferum		**Soft shield fern**
Species Diversity Significance*		
Hedgerow (Woody) Species Diversity:		**0 - Low Significance**
Ground Flora Species Diversity:		**0 - Low Significance**
Other Factors of Significance:		
Hedgerow follows Townland Boundary?		**Yes**

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-22 Hedgerow 15A located east of Proposed Turbine T15 at the centre of the Proposed Wind Farm site.

2.23 Hedgerow 15B

Table 2-23 Hedgerow Condition Assessment Results – Hedgerow 15B

Hedgerow ID:	Approximate Location:	Grid reference:
15B	ESE of Proposed Turbine T15	X 19025 87090
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto	Low, scrubby, hedgerow approx. 1.5 m high, following a Wall/Bank (<0.5m)
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Ground Flora Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Galium aparine		Cleavers

Cirsium arvense	Creeping thistle
Ulex europaeus	Gorse
Dryopteris filix-mas	**Male fern**
Urtica dioica	Nettle
Species Diversity Significance*	
Hedgerow (Woody) Species Diversity:	**0 - Low Significance**
Ground Flora Species Diversity:	**0 - Low Significance**
Other Factors of Significance:	
Hedgerow follows Townland Boundary?	No

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-23 Hedgerow 15B located south-southeast of Proposed Turbine T15 at the centre of the Proposed Wind Farm site.

2.24 Turbine 16

Proposed Turbine T16 will be located in an improved agricultural grassland (GA1) field which is bordered by mature stands of Sitka spruce plantation (WD4) to the northeast. There is a small EPA-mapped river running along the field boundary over 140m to the west of the proposed T16. A low,

scrubby hedgerow (WL1) approximately 1.5 m tall with gorse, bramble and bilberry runs along an old stone wall (BL1) to the west of the field.

Table 2-24 Botanical Survey Results – Proposed Turbine T16

Relevé T16 (2m x 2m)	Grid reference: X 19098 86728	Date 28/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	35%
Ranunculus repens	Creeping buttercup	15%
Holcus lanatus	Yorkshire fog	10%
Rumex acetosella	Sheep sorrel	10%
Juncus effusus	Soft rush	10%
Ranunculus acris	Meadow buttercup	10%
Cirsium arvense	Creeping thistle	5%
Trifolium repens	White clover	5%
Taraxacum officinale agg,	Dandelion	2%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-24 Example of receiving habitat at Proposed Turbine T16

2.25 Turbine 17

Proposed Turbine T17 will be located on improved agricultural grassland (GA1) habitat which is bordered by low hawthorn / gorse hedgerows (WL1) running over stone walls (BL1) to the north, south and west.

Table 2-25 Botanical Survey Results – Proposed Turbine T17

Relevé T17 (2m x 2m)	Grid reference: X 19612 86673	Date 27/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	25%
Holcus lanatus	Yorkshire fog	15%
Trifolium repens	White clover	15%
Rumex obtusifolius	Broad-leaved dock	15%
Festuca rubra	Red fescue	5%
Ranunculus repens	Creeping buttercup	10%
Rumex acetosella	Sheep sorrel	10%
Agrostis stolonifera	Creeping bent	5%
Urtica dioica	Nettle	5%

Cirsium arvense	Creeping thistle	5%
Taraxacum officinale agg.	Dandelion	2%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-25 Example of receiving habitat at Proposed Turbine T17

2.26 Hedgerow 17A

Table 2-26 Hedgerow Condition Assessment Results – Hedgerow 17A

Hedgerow ID:	Approximate Location:	Grid reference:
17A	N of Proposed Turbine T17	X 19601 86708
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, continuous, remnant hedgerow approx. 2.5 - 4m high, following a Wall/Bank (<0.5m).
Hedgerow (Tree) Species Present:		

Species	Common Name
Rubus fruticosus agg.	Bramble
Ulex europaeus	**Gorse**
Salix cinerea	**Grey willow**
Ground Flora Species Present:	
Species	Common Name
Rubus fruticosus agg.	Bramble
Galium aparine	Cleavers
Cirsium arvense	Creeping thistle
Ulex europaeus	Gorse
Stachys palustris	**Marsh woundwort**
Polystichum setiferum	**Soft shield fern**
Rumex obtusifolius	Broadleaf dock
Epilobium hirsutum	Willowherb

Species Diversity Significance*	
Hedgerow (Woody) Species Diversity:	**0 - Low Significance**
Ground Flora Species Diversity:	**0 - Low Significance**

Other Factors of Significance:	
Hedgerow follows Townland Boundary?	No

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-26 Hedgerow 17A located east of Proposed Turbine T17 at the centre of the Proposed Wind Farm site.

2.27 Hedgerow 17B

Table 2-27 Hedgerow Condition Assessment Results – Hedgerow 17B

Hedgerow ID:	Approximate Location:	Grid reference:
17B	SSE of Proposed Turbine T17	X 19612 86620
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Dense, scrubby, hedgerow approx. 1.5 - 2.5 m high, following a Wall/Bank (<0.5m)
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Crataegus monogyna		**Hawthorn**
Ground Flora Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble

Galium aparine	Cleavers
Ranunculus repens	Creeping buttercup
Cirsium arvense	Creeping thistle
Digitalis purpurea	**Foxgloves**
Stachys sylvatica	**Hedge woundwort**
Urtica dioica	Nettle
Polystichum setiferum	**Soft shield fern**

Species Diversity Significance*	
Hedgerow (Woody) Species Diversity:	**0 - Low Significance**
Ground Flora Species Diversity:	**1 – Slightly Significant**

Other Factors of Significance:	
Hedgerow follows Townland Boundary?	No

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-27 Hedgerow 17B located south-southeast of Proposed Turbine T17 at the centre of the Proposed Wind Farm site.

2.28 Hedgerow 17C

Table 2-28 Hedgerow Condition Assessment Results – Hedgerow 17C

Hedgerow ID:	Approximate Location:	Grid reference:
17C	SSW of Proposed Turbine T17	X 19634 86627
Date Surveyed:	**Surveyor(s):**	**Notes:**
27/08/2025	Nora Szijarto David Mesarcik	Gappy, remnant hedgerow approx. 1.5 - 2.5 m high, following a Wall/Bank (<0.5m).
Hedgerow (Tree) Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Ulex europaeus		**Gorse**
Ground Flora Species Present:		
Species		**Common Name**
Rubus fruticosus agg.		Bramble
Cirsium arvense		Creeping thistle
Stachys sylvatica		**Hedge woundwort**
Urtica dioica		Nettle
Polystichum setiferum		**Soft shield fern**
Species Diversity Significance*		
Hedgerow (Woody) Species Diversity:		**0 - Low Significance**
Ground Flora Species Diversity:		**1 – Slightly Significant**
Other Factors of Significance:		
Hedgerow follows Townland Boundary?		No

*Species in **Bold** are those included in the species list within Appendix D of the HAS guidelines (Foulkes et al., 2013).*

** Species Diversity Significance is calculated as the highest significance value for hedgerow / ground flora species for any 30 m sample along the hedgerow.*



Plate 2-28 Hedgerow 17C located south-southwest of Proposed Turbine T17 at the centre of the Proposed Wind Farm site.

2.29 Turbine 18

Proposed Turbine T18 will be located within an area of recently felled Sitka spruce plantation (WS5).

Table 2-29 Botanical Survey Results – Proposed Turbine T18

Relevé T18 (10m x 10m)	Grid reference: X 17696 86502	Date 28/08/2025
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	No canopy layer, felled Sitka spruce
Shrub Layer		
N/A		
Field Layer		
N/A		
Ground Layer		
Hylocomium splendens	Glittering Wood-moss	90%
Mnium hornum	Swan's-neck thyme-moss	40%

Dryopteris filix-mas	Male fern	10%
Fossitt (2000) Habitat Classification	Recently felled woodland (WS5)	
Affinity to Annex I habitat	No	



Plate 2-29 Example of receiving habitat at Proposed Turbine T18

2.30 Turbine 19

Proposed Turbine T19 will be located on improved agricultural grassland (GA1) habitat, which is surrounded by stone walls (BL1) and bordered by dense Sitka spruce conifer plantation (WD4) to the north, south and west.

Table 2-30 Botanical Survey Results – Proposed Turbine T19

Relevé T19 (2m x 2m)	Grid reference: X 18132 86467	Date 28/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial rye	50%
Holcus lanatus	Yorkshire fog	30%
Trifolium repens	White clover	25%
Agrostis stolonifera	Creeping bent	15%

Rumex obtusifolius	Broad-leaved dock	5%
Alopecurus pratensis	Meadow foxtail	3%
Ranunculus repens	Creeping buttercup	2%
Bellis perennis	Daisy	1%
Cardamine pratensis	Cuckoo flower	1%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-30 Example of receiving habitat at Proposed Turbine T19

2.31 Turbine 20

Proposed Turbine T20 will be located on improved agricultural grassland (GA1) habitat which is bordered by a patch of gorse / willow scrub (WS1) to the northeast and surrounded by dense Sitka spruce conifer plantation (WD4) to the south and southwest. There is a small EPA-mapped river running along the corner of the field, 70m to the east of the Proposed Turbine base.

Table 2-31 Botanical Survey Results – Proposed Turbine T20

Relevé T20 (2m x 2m)	Grid reference: X 18518 86317	Date 28/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial ryegrass	45%
Holcus lanatus	Yorkshire fog	40%
Agrostis stolonifera	Creeping bent	10%
Trifolium repens	White clover	5%
Rumex obtusifolius	Broad-leaved dock	2%
Plantago major	Greater plantain	1%

Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland
Affinity to Annex I habitat	No



Plate 2-31 Example of receiving habitat at Proposed Turbine T20

2.32 Turbine 21

Proposed Turbine T21 will be located within densely vegetated Sitka spruce conifer plantation (WD4).

Table 2-32 Botanical Survey Results – Proposed Turbine T21

Relevé T21 (10m x 10m)	Grid reference: X 17965 85965	Date 28/08/2025
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	100%
Shrub Layer		
N/A		
Field Layer		
Dryopteris dilatata	Broad buckler fern	2%
Ground Layer		
Mnium hornum	Swan's-neck thyme-moss	2%
Polytrichum juniperinum	Juniper haircap moss	1%
Thuidium tamarascinum	Tamarisk moss	1%
Hylocomium splendens	Glittering wood-moss	1%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-32 Example of receiving habitat at Proposed Turbine T21

2.33 Turbine 22

Proposed Turbine T22 will be located in an improved agricultural grassland (GA1) field which is bordered by bordered by mature stands of Sitka spruce plantation (WD4) on all sides.

Table 2-33 Botanical Survey Results – Proposed Turbine T22

Relevé T22 (2m x 2m)	Grid reference: X 15416 86088	Date 28/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial ryegrass	50%
Holcus lanatus	Yorkshire fog	35%
Trifolium repens	White clover	30%
Ranunculus repens	Creeping buttercup	30%
Festuca rubra	Red fescue	5%
Agrostis stolonifera	Creeping bent	5%
Ranunculus acris	Meadow buttercup	10%
Rumex acetosella	Sheep's sorrel	10%
Rumex obtusifolius	Broad-leaved dock	10%

Cardamine pratensis	Cuckoo flower	5%
Taraxacum officinale agg.	Dandelion	1%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-33 Example of receiving habitat at Proposed Turbine T22

2.34

Turbine 23

Proposed Turbine T23 will be located on improved agricultural grassland (GA1) habitat which is bordered by dense Sitka spruce conifer plantation (WD4) on all sides.

Table 2-34 Botanical Survey Results – Proposed Turbine T23

Relevé T23 (2m x 2m)	Grid reference: X 15982 86255	Date 28/08/2025
Species	Common Name	% Cover
Lolium perenne	Perennial ryegrass	70%
Trifolium repens	White clover	50%

Holcus lanatus	Yorkshire fog	30%
Ranunculus repens	Creeping buttercup	40%
Rumex obtusifolius	Broad-leaved dock	5%
Cardamine pratensis	Cuckoo flower	2%
Taraxacum officinale agg.	Dandelion	1%

Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland
Affinity to Annex I habitat	No



Plate 2-34 Example of receiving habitat at Proposed Turbine T23

2.35 Proposed 110kV Substation and associated Construction Compound

The proposed 110kV substation and associated construction compound are located adjacent to an existing forestry track within an immature conifer forestry (WD4) comprising a Sitka spruce monoculture with a scrubby ground layer comprising ling, gorse and bramble.



Plate 2-35 Example of receiving habitat at Proposed 110kV substation and associated construction compound.

2.36 220KV Loop-in Substation

The 220KV Loop-in substation will be located on improved agricultural grassland (GA1) habitat which is bordered by a treeline (WL2) on the north and northeast, a hedgerow (WL1) on the south and dense Sitka spruce conifer plantation (WD4) on the southwest side.

Table 2-35 Botanical Survey Results – 220kV Substation and associated Construction Compound 6

Relevé 220kV Substation (2m x 2m)	Grid reference: X 13188 89957	Date 05/05/2026
Species	Common Name	% Cover
Poa annua	Annual meadow grass	45%
Poa trivialis	Rough meadow grass	45%
Trifolium repens	White clover	20%
Cerastium fontanum	Mouse-ear chickweed	5%
Plantago major	Broadleaved plantain	2%
Taraxacum officinale agg.	Dandelion	2%
Veronica serpyllifolia	Thyme-leaved speedwell	1%
Bellis perennis	Common daisy	1%
Jacobaea vulgaris	Ragwort	1%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	WE1E - Poa annua - Plantago major Weed and inundation communities (Transitional 16.8%)	
Affinity to Annex I habitat	No	



Plate 2-36 Example of receiving habitat at 220kV Loop-in Substation

2.37 Borrow Pit 1

Borrow pit 1 will be located immediately adjacent to Proposed Turbine T1 within Sitka spruce conifer plantation (WD4).

Table 2-36 Botanical Survey Results – Borrow Pit 1

Relevé Borrow Pit 1 (10m x 10m)	Grid reference: X 19814 89535	Date 05/06/2026
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	65%
Shrub Layer		
Rubus fruticosus agg,	Bramble	40%
Field Layer		
Arrhenatherum elatius	False oat grass	5%
Dryopteris dilatata	Broad buckler fern	2%
Ground Layer		

Thuidium tamarascinum	Tamarisk moss	10%
Polytrichum commune	Common haircap	5%
Leaf/ needle litter		10%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-37 Example of receiving habitat at Borrow Pit 1

2.38 # Borrow Pit 2

Borrow Pit 2 will be located within densely vegetated Sitka spruce conifer plantation (WD4) along the road between Proposed Turbines T3 and T9.

Table 2-37 Botanical Survey Results – Borrow Pit 2

Relevé Borrow Pit 2 (10m x 10m)	Grid reference: X 20053 88323	Date 05/05/2026
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	99%

Shrub Layer		
N/A		
Field Layer		
Dryopteris dilatata	Broad buckler fern	2%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	25%
Hypnum jutlandicum	Heath plait-moss	10%
Campylopus flexuousus	Rusty Swan-neck Moss	10%
Leaf/ needle litter		10%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-38 Example of receiving habitat at Borrow Pit 2

2.39 Borrow Pit 3

Borrow Pit 3 will be located within an immature Sitka spruce conifer plantation (WD4) west of Proposed Turbine T13.

Table 2-38 Botanical Survey Results – Borrow Pit 3

Relevé Borrow Pit 3 (10m x 10m)	Grid reference: X 17758 87062	Date 05/06/2026
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	90%
Pinus contorta	Lodgepole pine	6%
Shrub Layer		
Rubus fruticosus agg.	Bramble	25%
Ulex europaeus	Gorse	15%
Calluna vulgaris	Ling Heather	5%
Field Layer		
N/A		
Ground Layer		
Brash (woody debris)		10%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-39 Example of receiving habitat at Borrow Pit 3

2.40 Borrow Pit 4

Half of Borrow Pit 4 will be located within young densely vegetated Sitka spruce conifer plantation (WD4), the other half of the borrow pit will be located in an area of spoil and bare ground (see Plate 2-40 below) west of Proposed Turbine T18.

Table 2-39 Botanical Survey Results – Borrow Pit 4

Relevé Borrow Pit 4 (10m x 10m)	Grid reference: X 17419 86722	Date 05/06/2026
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	90%
Shrub Layer		
Calluna vulgaris	Ling Heather	50%
Vaccinium myrtillus	Bilberry	20%
Rubus fruticosus agg.	Bramble	10%
Ulex europaeus	Gorse	5%
Field Layer		

Pteridium aquilinum	Bracken	5%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	80%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-40 Example of receiving habitat at Borrow Pit 4



Plate 2-41 Example of receiving habitat at Borrow Pit 4

2.41 Borrow Pit 5

Borrow Pit 5 will be located on improved agricultural grassland (GA1) habitat which is bordered by dense Sitka spruce conifer plantation (WD4) to the north east and northwest.

Table 2-40 Botanical Survey Results – Borrow Pit 5

Relevé Borrow Pit 5 (10m x 10m)	Grid reference: X 15637 86290	Date: 05/06/2026
Species	Common Name	% Cover
Lolium perenne	Perennial ryegrass	15%
Holcus lanatus	Yorkshire fog	80%
Ranunculus repens	Creeping buttercup	15%
Rumex obtusifolius	Broad-leaved dock	4%
Rumex acetosa	Common sorrel	1%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	

Affinity to Annex I habitat	No



Plate 2-42 Example of receiving habitat at Borrow Pit 5

2.42 Construction Compound 1

Construction compound 1, south of Proposed Turbine T23, will be located within densely vegetated Sitka spruce conifer plantation (WD4) with very little ground flora, as there is very little light penetration.

Table 2-41 Botanical Survey Results –Construction Compound 1

Relevé Construction Compound 1 (10m x 10m)	Grid reference: X 16110 86076	Date 05/06/2026
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	100%
Shrub Layer		
N/A		
Field Layer		
N/A		

Ground Layer		
Thuidium tamarascinum	Tamarisk moss	25%
Brash (woody debris)		60%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
IVC (Irish Vegetation Community classification)	*N/A*	
Affinity to Annex I habitat	No	



Plate 2-43 Example of receiving habitat at Construction Compound 1

2.43 Construction Compound 2

Construction compound 2 will be located within young densely vegetated Sitka spruce conifer plantation (WD4) west of Proposed Turbine T13.

Table 2-42 Botanical Survey Results – Construction Compound 2

Relevé Construction Compound 2 (10m x 10m)	Grid reference: X 17682 86989	Date 05/06/2026
Species	**Common Name**	**% Cover**
Canopy Layer		
Picea sitchensis	Sitka spruce	95%
Shrub Layer		
Calluna vulgaris	Ling heather	50%
Rubus fruticosus agg.	Bramble	80%
Field Layer		
N/A		
Ground Layer		
N/A		
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-44 Example of receiving habitat at Construction Compound 2

2.44 Construction Compound 3

Construction compound 3 will be located within young densely vegetated Sitka spruce conifer plantation (WD4) north of Proposed Turbine T12.

Table 2-43 Botanical Survey Results – Construction Compound 3

Relevé Construction Compound 3 (10m x 10m)	Grid reference: X 22146 87952	Date 05/06/2026
Species	Common Name	% Cover
Canopy Layer		
Picea sitchensis	Sitka spruce	95%
Salix spp.	Willow	30%
Shrub Layer		
Rubus fruticosus agg.	Bramble	5%
Calluna vulgaris	Ling heather	5%
Field Layer		
Blechnum spicant	Hard fern	5%

Potentilla reptans	Creeping cinquefoil	2%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	75%
Polytrichum commune	Common haircap	50%
Sphagnum tenellum	Soft bog-moss	50%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-45 Example of receiving habitat at Construction Compound 3

2.45 Construction Compound 4

Construction compound 4 will be located southwest of Proposed Turbine T3 within a Sitka spruce conifer plantation (WD4) with a relatively open canopy.

Table 2-44 Botanical Survey Results – Construction Compound 4

Relevé Construction Compound 4 (10m x 10m)	Grid reference: X 19985 88833	Date 05/06/2026
Species	**Common Name**	**% Cover**
Canopy Layer		
Picea sitchensis	Sitka spruce	80%
Shrub Layer		
N/A		
Field Layer		
Molinia caerulea	Molinia	5%
Ground Layer		
Thuidium tamarascinum	Tamarisk moss	75%
Brash (woody debris)		50%
Fossitt (2000) Habitat Classification	Conifer plantation (WD4)	
Affinity to Annex I habitat	No	



Plate 2-46 Example of receiving habitat at Construction Compound 4

2.46 Proposed Security Compounds

There are 4 no. security compounds proposed. Three of these will be located within conifer forestry (WD4) with one compound located within improved agricultural grassland (GA1). Representative relevés of the habitats within the footprint of these compounds are provided below.

2.46.1 Security Compound within Improved Agricultural Grassland

A security compound will be located northeast of Proposed Turbine T15 on improved agricultural grassland (GA1) habitat, adjacent to an existing farm access track.

Table 2-45 Botanical Survey Results – Security Compound northeast of Proposed Turbine 15

Relevé Security Compound (2m x 2m)	Grid reference: X 19131 87184	Date 05/06/2026
Species	Common Name	% Cover
Lolium perenne	perennial ryegrass	55%
Holcus lanatus	Yorkshire fog	30%
Trifolium repens	white clover	15%
Ranunculus repens	creeping buttercup	15%
Festuca rubra	red fescue	10%
Rumex obtusifolius	broad-leaved dock	5%
Fossitt (2000) Habitat Classification	Improved agricultural grassland (GA1)	
IVC (Irish Vegetation Community classification)	GL2C - *Holcus lanatus – Lolium perenne* grassland	
Affinity to Annex I habitat	No	



Plate 2-47 Example of receiving habitat within footprint of proposed security compound.

2.46.2 Conifer Plantation

A Security Compound will be located adjacent to an existing turning area within conifer forestry southwest of proposed turbine 3 (WD4).

Table 2-46 Botanical Survey Results – Security Compound within Conifer Plantation

Relevé Security Compound (10m x 10m)	Grid reference: X 19985 88561	Date 05/05/2026
Species	Common Name	% Cover
Picea sitchensis	Sitka spruce (sapling)	5%
Betula pendula	Silver birch	10%
Rubus fruticosus agg.	Bramble	50%
Prunus spinosa	Blackthorn	5%
Molinia caerulea	Purple moor-grass	30%
Taraxacum officinale agg.	Dandelion	15%
Juncus effusus	Soft rush	45%
Anthoxanthum odoratum	Sweet vernal grass	15%
Lotus corniculatus	Birds foot trefoil	5%
Fossitt (2000) Habitat Classification	Conifer forestry (WD4)	
Affinity to Annex I habitat	No	



Plate 2-48 Example of receiving habitat within the footprint of a proposed security compound.

3. CONCLUSION

A description of relevés undertaken within and adjacent to Proposed Project footprint has been provided within this report. The Proposed Project footprint is dominated by commercial forestry (WD4), and agricultural grassland (GA1). No Annex I habitats occur within the Proposed Project footprint.

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