

8 Ecology

8.1 Introduction

- 8.1.1 This chapter assesses the potential impacts on (non-avian) ecology associated with the construction, and operation of the Proposed Development. This chapter (and its associated figures and Technical Appendices) is not intended to be read as a standalone assessment and reference should be made to the introductory chapters of this Environmental Impact Assessment (EIA) Report (**EIAR Volume 2, Chapters 1-5**).
- 8.1.2 The assessment has been carried out by Elizabeth Butler of Ramboll UK Limited (Ramboll). Elizabeth is an ecological consultant with a Masters in Biodiversity Conservation and Ecosystem Services and six years' experience undertaking ecology surveys and Ecological Impact Assessments (EclAs).
- 8.1.3 This chapter is supported by the following figures and technical appendices:
- Volume 3a: Figures
 - **Figure 8.1: Ecology Constraints;**
 - **Figure 8.2: Phase 1 Habitats;**
 - **Figure 8.3: NVC;**
 - **Figure 8.4: GWDTE; and**
 - **Figure 8.5: Target Notes.**
 - Volume 4: Technical Appendices
 - **Technical Appendix 8.1: Ecology Methodology and Results; and**
 - **Technical Appendix 8.2: Outline Habitat Management Plan.**
- 8.1.4 Figures and Technical Appendices are referenced in the text, where relevant.

8.2 Assessment Methodology and Significance Criteria

Scope of the Assessment

- 8.2.1 This chapter focuses on the potential impacts of the construction and operation of the Proposed Development upon ecological features, aligning with best practice EclA Guidelines developed by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹ chapter has also been prepared with reference to the applicable legislative framework as well as national and local planning policy, outlined in **Section 8.2**, guidance documents for habitats and species are referenced throughout this chapter.
- 8.2.2 The specific objectives of this chapter are to:
- describe the assessment methodology and significance criteria used in completing the impact assessment;
 - describe the ecological baseline of the Proposed Development and its zone of influence (ZOI)², including designated nature conservation sites, habitats and protected species, and, thereby, identify the ecological features that will be the focus of this assessment;
 - evaluate the sensitivity of each ecological feature;

¹ CIEEM (2018), *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1. Available: <https://cieem.net/wp-content/uploads/2018/08/EClA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1.pdf> [accessed 11th April 2022]

² The area over which ecological features may be subject to significant effects as a result of the Proposed Development and its associated activities. In this case, the ZOI is considered to be up to 10 km beyond the site boundary.

- describe the potential impacts from the Proposed Development, both direct and indirect, on ecological features and assess whether they result in likely significant adverse effects for the ecological features;
- describe the mitigation measures proposed to avoid, reduce and offset likely significant adverse effects;
- assess the significance of residual effects remaining following the implementation of mitigation; and
- assess the significance of cumulative effects between the Proposed Development and cumulative developments.

8.2.3 Potential impacts and effects on ornithological features and forestry are addressed separately in **Chapter 9: Ornithology** and **Chapter 14: Forestry (EIAR Volume 2)**, respectively.

8.2.4 The chapter also assesses cumulative effects as arising from the addition of the Proposed Development to other cumulative developments. **Figure 15.1: Cumulative Development (Volume 3a)** illustrates the Proposed Development along with other cumulative developments recorded as consented (under construction or not yet constructed), those in planning and those within the public domain, deemed reasonably foreseeable, within 15 km of the Proposed Development.

8.2.5 The assessment is based on the Proposed Development as described in **Chapter 2: Description of the Proposed Development (EIAR Volume 2)**.

8.2.6 The scope of the assessment has been informed by consultation responses summarised in **Table 8-1**.

Legislation, Policy and Guidance

8.2.7 The scope of the assessment has been informed by the following policy and legal framework:

Legislation

8.2.8 Relevant legislation has been reviewed and taken into account as part of this ecology assessment. Of relevance are:

- EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna, 92/43/EEC 1992³;
- Conservation of Habitats and Species (Amendment) (EU Exit) Regulation 2019⁴;
- The Conservation of Habitats and Species Regulations 2017⁵;
- Conservation (Natural Habitats Etc.) Regulations 1994⁶;
- Wildlife and Countryside Act 1981⁷;
- Nature Conservation (Scotland) Act 2004⁸;
- Wildlife and Natural Environment (Scotland) Act 2011⁹;
- UK Post-2010 Biodiversity Framework 2012¹⁰;
- Electricity Act 1989¹¹.

³ EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (1992): http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [Accessed 11 April 2022].

⁴ The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019): [https://www.legislation.gov.uk/ukdsi/2019/9780111176573#:~:text=%20The%20Conservation%20of%20Habitats%20and%20Species%20\(Amendment\),of%20capturing%20or%20killing%20fish%20are%E2%80%94%20More](https://www.legislation.gov.uk/ukdsi/2019/9780111176573#:~:text=%20The%20Conservation%20of%20Habitats%20and%20Species%20(Amendment),of%20capturing%20or%20killing%20fish%20are%E2%80%94%20More) [Accessed 11 April 2022].

⁵ The Conservation of Habitats and Species Regulations (2017): <https://www.legislation.gov.uk/ukdsi/2017/1012/contents/made> [Accessed 11 April 2022].

⁶ The Conservation (Natural Habitats Etc.) Regulations (as amended) (1994): <http://www.legislation.gov.uk/ukdsi/1994/2716/contents/made> [Accessed 11 April 2022].

⁷ The Wildlife and Countryside Act (as amended) (1981): <http://www.legislation.gov.uk/ukpga/1981/69> [Accessed 11 April 2022].

⁸ Nature Conservation (Scotland) Act (as amended) (2004): <http://www.legislation.gov.uk/asp/2004/6/contents> [Accessed April 2022]

⁹ Wildlife and Natural Environment (Scotland) Act (2011): <http://www.legislation.gov.uk/asp/2011/6/enacted> [Accessed April 2022]

¹⁰ UK Post-2010 Biodiversity Framework (2012): <http://jncc.defra.gov.uk/page-6189> [Accessed April 2022]

¹¹ Electricity Act (1989): <https://www.legislation.gov.uk/ukpga/1989/29/contents> [Accessed April 2022]

- The Electricity Works (Environmental Impact Assessment) (Scotland) Act 2017¹²; and
- The Ramsar Convention on Wetlands 1971¹³.

Planning Policy

8.2.9 Relevant planning policies reviewed for this ecology assessment are:

- Scottish Planning Policy 2014¹⁴;
- UK Biodiversity Action Plan (BAP) 2010¹⁵;
- Scottish Biodiversity List (SBL) 2005¹⁶;
- 2020 Challenge 2013¹⁷;
- Argyll and Bute Local BAP¹⁸; and
- Argyll and Bute Biodiversity Duty Action Plan¹⁹.

Guidance

8.2.10 Best practice guidance has been recognised when undertaking field surveys and is detailed in **Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)**.

Extent of the Study Area

8.2.11 As detailed in **Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)**, the Ecology Study Area comprises an Ecology Desk Study Area of 10 km buffer around the Proposed Development and an Ecology Field Survey Area of 250 m on either side of the Proposed Development which includes all but one section of proposed new access tracks, as shown on **Figure 8.1: Ecology Constraints** and **Figure 8.2: Phase 1 Habitat (EIAR Volume 3a)**.

Consultation Undertaken to Date

8.2.12 Consultation undertaken to date mainly pertains to EIA Scoping. Scoping responses received at the time of writing that are relevant to this chapter are captured in **Table 8-1**. Further information can be found in **Technical Appendix 4.3: Scoping Consultation Register (EIAR Volume 4)**.

¹² The Electricity Works (Environmental Impact Assessment) (Scotland) Act (2017): <http://www.legislation.gov.uk/ssi/2017/101/contents/made> [Accessed April 2022]

¹³ Ramsar Convention on Wetlands (1971): <http://www.ramsar.org/about-the-ramsar-convention> [Accessed April 2022]

¹⁴ Scottish Planning Policy (2014): <https://www.gov.scot/publications/scottish-planning-policy/pages/2/> [Accessed April 2022]

¹⁵ UK BAP: <http://jncc.defra.gov.uk/default.aspx?page=5155> [Accessed April 2022]

¹⁶ The Scottish Biodiversity List (2005): <https://www.nature.scot/scottish-biodiversity-list-documents> [Accessed April 2022]

¹⁷ The 2020 Challenge: <http://www.gov.scot/Publications/2013/06/5538> [Accessed April 2022]

¹⁸ The Argyll and Bute Local BAP (2010-2015): <https://www.argyll-bute.gov.uk/sites/default/files/Unknown/AandB%20BAP%20Draft.pdf> [Accessed April 2022]

¹⁹ Argyll and Bute Biodiversity Duty Action Plan (2016-2021): https://www.argyll-bute.gov.uk/sites/default/files/argyll_and_bute_council_biodiversity_duty_action_plan_final_version_april_2016_2.pdf [Accessed April 2022]

Table 8-1: Scoping Responses and Other Consultations of Relevance

Organisation	Type of Consultation	Response	How response has been considered
NatureScot (NS)	Scoping Response, April 2022	Impacts on nationally important carbon-rich soils, deep peat and priority peatland habitat need to be addressed.	The avoidance of high-quality habitats that are actively peat-forming has been considered throughout the design process and these areas have been avoided, where possible. The full results of habitat surveys are provided in Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4) and summarised in Section 8.3 . Details of peat-probing surveys are provided in Chapter 10: Geology and Soils (EIAR Volume 2) .
		NS advise that pre-construction surveys should be undertaken to inform the presence of protected species.	Pre-construction protected species surveys have been included as standard mitigation, as detailed in Section 8.4 .
		Any new access tracks should be subject to appropriate ecological surveys and assessment. If track widening works are required then ecological surveys should be conducted in those areas.	The methodology for the field surveys undertaken on the site are provided in Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4) . The results of these surveys are provided in Section 8.3 and Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4) .
		The proposed route currently crosses the Blarghour wind farm Habitat Management Area which aims to restore and enhance blanket bog/peatland habitat to increase the suitability for associated species. The Applicant should avoid this area or consider undergrounding the OHL if practicable.	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This includes priority peatland habitat. Mitigation measures are discussed in Section 8.4 . Peatland habitat management issues are dealt with in the Outline Habitat Management Plan provided in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) .
		The scoping layout indicates that parts of the site are underlain with Class 2 peatlands which are nationally important carbon rich soils, deep peat and priority peatland habitats. As such, there is a requirement for detailed peat and vegetation surveys to be undertaken to ascertain the quality and	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This includes priority peatland habitat. Mitigation measures are discussed in Section 8.4 . Peatland habitat management issues are dealt with in the outline habitat

Organisation	Type of Consultation	Response	How response has been considered
		distribution of peatland and priority habitats across the site as per NS guidance	management plan provided in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) . Peatland mitigation is also considered in Chapter 10: Geology and Soils (EIAR Volume 2) . An outline peat management plan is provided in Technical Appendix 10.2: Outline Peat Management Plan (EIAR Volume 4) . Best practice for working in peatland is also considered in Technical Appendix 10.3: Peat Landslide Hazard Risk Assessment (EIAR Volume 4) .
		It is not clear whether constructed tracks would be required to facilitate construction of this line within Class 1 & 2 peatlands, however, we consider that these and construction compounds should not be located within these areas. We advise that the use of low ground pressure vehicles, temporary trackway or bog mats and minimising vehicle movements would reduce impacts to this habitat.	Class 1 & 2 peatlands have been avoided as much as possible. However, where this is not possible, mitigation in the form of peatland restoration and the use of low ground pressure vehicles, temporary trackway or bog mats and minimising vehicle movements in the habitats would be required to reduce impacts on the habitat, as detailed in Section 8.4 .
		Albeit that peatland classifications may change in light of detailed site specific surveys, we advise that efforts are made to avoid the siting of towers and associated infrastructure on areas of nationally important peatland and areas of deep peat. The EIA Report should demonstrate that any significant effects have been substantially overcome by siting, design or other mitigation. Details of all mitigation and restoration, including a peatland management plan, should be included in the EIA Report.	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This includes priority peatland habitat. Mitigation measures are discussed in Section 8.4 . Peatland habitat management issues are dealt with in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) . Peatland mitigation is also considered in Chapter 10: Geology and Soils (EIAR Volume 2) . Best practice for working in peatland is also considered in Technical Appendix 10.3: Peat Landslide Hazard Risk Assessment (EIAR Volume 4) .
Scottish Environment Protection Agency (SEPA)	Scoping Response, March 2022	Note that the key issues that must be addressed within the EIA includes: <ul style="list-style-type: none"> Minimising impact on peat and peatland; 	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This

Organisation	Type of Consultation	Response	How response has been considered
		<ul style="list-style-type: none"> Avoiding good quality or rare Groundwater Dependent Terrestrial Ecosystem (GWDTE) habitats and minimising impacts on other GWDTE habitats; and Avoiding impacts on watercourses and other water features by ensuring suitable buffers and using best practise design crossings. 	<p>includes priority peatland habitat. Mitigation measures are discussed in Section 8.4.</p> <p>The presence of GWDTEs is discussed in Section 8.3 and an assessment of GWDTEs is provided in Chapter 11: Water Environment (EIAR Volume 2). Potential impacts and mitigation are discussed in Section 8.4. The majority of the potential GWDTEs present in the Ecology Field Survey Area are unlikely to be groundwater dependent due to the nature of the hydrological conditions on the site.</p> <p>Watercourse buffers and watercourse crossing design are detailed in Chapter 11: Water Environment (EIAR Volume 2).</p>
		Please consider generic SEPA advice on scoping for this type of development ²⁰ attached with scoping response.	Generic SEPA advice has been considered throughout the chapter. For example, pollution prevention guidelines are followed in Section 8.4 . General mitigation measures to protect watercourses is also included within Technical Appendix 2.3: SSEN Transmission General Environmental Management Plans (GEMPs) (EIAR Volume 4) .
		SEPA welcome any proposals for peatland or wetland restoration, riparian improvements, and wet woodland planting.	Restoration and enhancement measures are provided in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) .
RSPB Scotland	Scoping Response, April 2022	This EIAR should include a full survey, impact assessment and proposals for mitigation in relation to habitats on this site. Mitigation should minimise impact and avoid area of high-quality habitats found upon the site. Particular attention should be given to peatlands, avoiding or minimising the impact on class 2 peat areas. The response states that an eastern route within the corridor should enable this with class 5 route reducing peat impacts. A full assessment of the carbon	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This includes priority peatland habitat. Mitigation measures are discussed in Section 8.4 . Peatland habitat management issues are dealt with in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) . Peatland mitigation and carbon implications of the Proposed Development are also considered in Chapter 10:

²⁰ <https://www.sepa.org.uk/regulations/>

Organisation	Type of Consultation	Response	How response has been considered
		implications of the proposal should be undertaken and, if required, a mitigation plan for any peatland affected.	Geology and Soils (EIAR Volume 2). An Outline Peat Management Plan is Technical Appendix 10.2: Outline Peat Management Plan (EIAR Volume 4) . Best practice for working in peatland is also considered in Technical Appendix 10.3: Peat Landslide Hazard Risk Assessment (EIAR Volume 4) .
		The route has potential to cut across several areas of Ancient Woodland, any loss of this habitat should be minimised and if unavoidable, compensatory native planting should be undertaken. This should focus on native woodland creation ideally rainforest within Argyll/ native upland woodland transition within the route area. The aim would be to achieve a positive biodiversity net gain.	Habitat loss would occur in Ancient Woodland, as detailed in Section 8.4 and in Chapter 14: Forestry (EIAR Volume 2) . Mitigation measures include compensatory native tree planting to enhance existing Ancient Woodland areas, as detailed in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) .
		The EIAR should consider what mitigation measures are required to minimise impact on both important habitats and species and contain detailed ecological justification for any such proposals, including relevant time frames for mitigation in relation to Site development.	Mitigation measures required to mitigate for likely significant effects are detailed in Section 8.4 .
		Woodland removal should be kept to a minimum and where woodland is felled, it should be replanted. Where woodland removal is proposed for development, the relevant EIA regulations will apply and the EIA Report should justify and provide evidence for the need for woodland removal and the associated mitigation measures. Design approaches that reduce the scale of felling required to facilitate the development must be considered and integration of the development with the existing woodland structure is a key part of the consenting process.	The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance and highest sensitivity to impacts. This includes woodland. Mitigation measures are discussed in Section 8.4 . Compensatory planting is detailed in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) . Woodland removal and mitigation are also considered in Chapter 14: Forestry (EIAR Volume 2) .
Scottish Forestry	Scoping Response, March 2022	The effects of felling, woodland removal and re-	The effects of felling, woodland removal and re-establishment,

Organisation	Type of Consultation	Response	How response has been considered
		<p>establishment should be considered (i.e., not just woodland removal). This should also include indirect impacts on adjacent woodlands. Scottish Forestry recommend that each relevant chapter contains a section dedicated to the effect of woodland management activity.</p>	<p>and woodland management are considered in Chapter 14: Forestry (EIAR Volume 2), Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) and in Sections 8.4.</p>
		<p>The Applicant should consider the potential cumulative impact of existing developments and the Proposed Development on the forest resource in respect to the local and regional context. In particular, consideration must be given to the implication of felling operations on such things as habitat connectivity, biodiversity, water management, landscape impact, impact on timber transport network and forestry policies included in the local and regional Forestry and Woodland Strategies and local development plans.</p>	<p>Cumulative impacts on the forest resource and impacts on forestry policies are considered in Chapter 14: Forestry (EIAR Volume 2). The effects of felling on habitat connectivity and biodiversity are detailed in Section 8.4. The implications of felling on water management are detailed in Chapter 11: Water Management (EIAR Volume 2). The landscape and visual implications of felling are detailed in Chapter 6: LVIA (EIAR Volume 2). The implications of felling on the timber transport network are detailed in Chapter 12: Traffic and Transport (EIAR Volume 2).</p>

Effects Scoped Out

- 8.2.13 The Proposed Development would not have a fixed operational life as it is assumed to be operational for 50 years or more. Effects associated with the construction phase can be considered to be representative of the worst-case decommissioning effects and therefore decommissioning effects have been scoped out.

Method of Baseline Data Collation

Desk Study

- 8.2.14 A desk study was undertaken to collect existing baseline data about the Ecology Desk Study Area as defined above and as shown on **Figure 8.1: Ecology Constraints** and **Figure 8.2: Phase 1 Habitat (EIAR Volume 3a)**. Further information regarding data sources, methodologies and results are detailed in **Technical Appendix 8.1: Ecology Methods and Results (EIAR Volume 4).**

Field Survey

- 8.2.15 Field surveys were undertaken by Ramboll ecologists Elizabeth Butler and Stuart Abernethy in March 2022. Extended Phase 1 surveys were undertaken across the entire Ecology Field Survey Area, along with targeted National Vegetation Classification (NVC) surveys, Habitat Condition Assessment (HCA) and protected species surveys. The methodology for these surveys is detailed in **Technical Appendix 8.1: Ecology Methods and Results (EIAR Volume 4).**

Limitations and Assumptions

- 8.2.16 It should be noted that the availability and quality of the data obtained during desk studies is reliant on third party responses and recorders. This varies from region to region and for different species groups. Furthermore, the comprehensiveness of data often depends on the level of coverage, the expertise and experience of the recorder and the submission of records to the local recorder. The habitat and faunal surveys provide a snapshot of ecological conditions and do not record plants or animals that may be present in the Ecology Field Survey Area at different times of the year. The absence of a particular species cannot be confirmed by a lack of field signs and only concludes that an indication of its presence was not located during the survey effort.
- 8.2.17 One section of proposed new access track which passes outwith the Ecology Field Survey Area was added to the Proposed Development following completion of the field surveys. This section passes through coniferous plantation woodland which is ubiquitous within the Ecology Field Survey Area and largely unsuitable for protected species to be present. No field signs of protected species were recorded in that part of the Ecology Field Survey Area closest to the section of track in question and no felling would occur prior to a pre-construction survey as set out in the mitigation section of this chapter. As such, the absence of detailed survey of that short section is not considered to be a limitation on the accuracy of this assessment.

Method of Assessment

- 8.2.18 The methodology for impact assessment on ecological features within the Ecology Study Area is detailed in **Technical Appendix 8.1: Ecology Methods and Results (EIAR Volume 4)**. This details methods for evaluating importance of ecological features (geographic conservation importance), characterising impacts (direction, magnitude, extent, duration, frequency, timing and reversibility) and the assessment of potential effect significance (major, moderate, minor or negligible). **Technical Appendix 8.1: Ecology Methods and Results (EIAR Volume 4)** also details methodology used to determine cumulative effect significance.
- 8.2.19 Criteria and methodologies used as part of this assessment, including the cumulative assessment, all follow standard guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM)²¹.

8.3 Baseline Conditions

Current Baseline

Desk Study

Statutory Designated Nature Conservation Sites

- 8.3.1 No statutory designated nature conservation sites for ecological features occur within the Ecology Field Survey Area, as shown on **Figure 8.1: Ecology Constraints (EIAR Volume 3a)**. The statutory designated nature conservation sites for ecological features that occur in the Ecology Desk Study Area and that may have potential connectivity with the Proposed Development are detailed in Error! Reference source not found. All other statutory designated nature conservation sites that are not considered to have potential connectivity with the Proposed Development and are detailed in **Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)**. These statutory designated nature conservation sites for ecological features are not considered further in this assessment.

²¹ CIEEM (2018), *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1. Winchester: CIEEM.

Table 8-2: Statutory Designated Nature Conservation Sites

Site Name	Qualifying Features	Distance from Proposed Development at Closest Point (km)	Connectivity with Proposed Development
Loch Etive Woods Special Area of Conservation (SAC)	<ul style="list-style-type: none"> • Alder <i>Alnus glutinosa</i> woodland on floodplains. • Western acidic oak woodland. • Mixed woodland on base-rich soils associated with rocky slopes. • Otter <i>Lutra lutra</i>. 	6.6 km to the north	Separated from the Proposed Development by extensive upland habitat, forestry and Loch Awe, therefore no direct or indirect impacts on the habitats are considered possible. Otter can travel up to 20 km between watercourses and waterbodies, therefore indirect impacts on otter are possible, but considered to be unlikely.
Glen Nant Site of Species Scientific Interest (SSSI) and National Nature Reserve (NNR)	<ul style="list-style-type: none"> • Upland oak woodland. • Bryophyte assemblage. • Lichen assemblage. • Otter. • Cranefly <i>Tipula luridorostris</i> (nationally rare species). 	10.25 km to the north west	Separated from the Proposed Development by extensive upland habitat, forestry and Loch Awe, therefore no direct or indirect impacts on the qualifying features are possible.

Non-statutory Designated Nature Conservation Sites

- 8.3.2 There is one area of woodland identified as Ancient Woodland and eight areas of woodland included on the semi-natural woodland inventory²² in the Ecology Study Area and crossed by the Proposed Development, as shown on **Figure 8.1: Ecology Constraints (EIAR Volume 3a)**.
- 8.3.3 Native and Ancient Woodlands are important for biodiversity and nature conservation. Ancient Woodland is defined as an area of woodland that has been continually wooded since 1750, and there is a strong presumption in Scottish Planning Policy against the removal of woodland on Ancient Woodland sites²³. However, the two largest areas of woodland included on the semi-natural woodland inventory in the Ecology Field Survey Area and crossed by the Proposed Development are primarily coniferous woodland plantation, which offers limited support for biodiversity and is, therefore, not considered further in this assessment.
- 8.3.4 An area of upland oakwood along the Allt Criche watercourse is classified as Ancient Woodland on the Ancient Woodland Inventory (AWI). Despite the area's classification, tree cover in this area has been intermittent since 1750, and the trees are around 100 years old. However, despite the lack of ancient or veteran trees, there is a good amount of remnant Ancient Woodland features such as specialist plants and standing deadwood, hence for the purpose of this assessment the classification of Ancient Woodland has been retained.

Argyll and Bute Local BAP

²² A Guide to Understanding the Ancient Woodland Inventory (2018): <https://www.nature.scot/sites/default/files/2018-11/A%20guide%20to%20understanding%20the%20Scottish%20Ancient%20Woodland%20Inventory%20%28AWI%29.pdf> [Accessed 11 April 2022].

²³ The Scottish Government's Policy on Control of Woodland Removal (2009): <https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument/285> [Accessed 5 October 2021].

8.3.5 The Ecology Study Area is located in the Argyll and Bute BAP area²⁴. The BAP covers the period of 2010-2015 but is yet to be updated. It should be read in conjunction with the Argyll and Bute Biodiversity Duty Action Plan²⁵. The priority habitats and species present in Argyll and Bute and included in the BAP which are relevant to the Proposed Development based on the habitats and species recorded in the Ecology Field Survey Area, are detailed in **Table 8-3**.

Table 8-3: Relevant Habitats and Species included in the Argyll and Bute BAP

Habitat	Species
Atlantic woodland	Lichen species
Improved grassland	Marsh fritillary <i>Euphydryas aurinia</i>
Machair and dune	Bats
Native Caledonian pinewoods	Otter
Peatlands	Pearl-bordered fritillary <i>Boloria euphrosyne</i>
Planted conifer forest	Red deer <i>Cervus elaphus</i>
Unimproved grassland	Red squirrel
	Brown hare <i>Lepus europaeus</i>
	Water vole
	Wildcat <i>Felis silvestris</i>
	Slender Scotch burnet <i>Zygaena loti</i>
	Sword-leaved helleborine <i>Cephalanthera longifolia</i>
	Transparent burnet moth <i>Zygaena purpuralis</i>

Field Surveys

8.3.6 Full details of the results of the field surveys undertaken for the Proposed Development are provided in **Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)**. Summarised results are provided in this chapter.

8.3.7 The dominant habitats present in the Ecology Field Survey Area are coniferous woodland plantation, wet heath and blanket bog, as show on **Figure 8.2: Phase 1 Habitats (EIAR Volume 3a)**. Target notes are shown on **Figure 8.5: Target Notes (EIAR Volume 3a)** and described in **Table 8.1.7, Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)**. Potentially sensitive habitats (excluding coniferous plantation woodland) recorded in the field survey area are detailed in **Table 8-4**²⁶.

²⁴ The Argyll and Bute Local BAP (2010-2015): <https://www.argyll-bute.gov.uk/sites/default/files/Unknown/AandB%20BAP%20Draft.pdf> [Accessed 11 April 2022].

²⁵ Argyll and Bute Biodiversity Duty Action Plan (2016-2021): https://www.argyll-bute.gov.uk/sites/default/files/argyll_and_bute_council_biodiversity_duty_action_plan_final_version_april_2016_2.pdf [Accessed 11 April 2022].

²⁶ The area within the Proposed Development footprint is considered in Section 6.6. This is the baseline of what is present in the field Study Area and is used to calculate the percentage loss shown in Tables 6-8 to 6-11.

Table 8-4: Sensitive Habitat Types

Habitat Type	Area within Ecology Field Survey Area (ha)
A1.1.1 Semi-natural Broadleaved Woodland	77.6
A1.1.2 Broadleaved Woodland Plantation	11.2
A1.3.1 Semi-natural Mixed Woodland	37.5
B2.2 Semi-improved Neutral Grassland	4.9
B5 Marshy Grassland	68.0
D2 Wet Heath	171.8
E1.6.1 Blanket Bog	87.3

8.3.8 Running water habitat is also present in the Ecology Field Survey Area, including the River Aray, multiple tributaries of the River Aray and the Erallich Water. A number of watercourse crossings occur as part of the Proposed Development and further details are provided in **Technical Appendix 11.1: Watercourse Crossing Assessment (EIAR Volume 4)**.

8.3.9 No invasive non-native²⁷ plant species were recorded during field surveys.

GWDTes

8.3.10 The habitats classified during NVC surveys are shown on **Figure 8.3: NVC (EIAR Volume 3a)**. The NVC results were used to determine the potential groundwater dependency of the habitats present in the Ecology Field Survey Area. Two moderate potential GWDTes and two high potential GWDTes were recorded, as shown on **Figure 8.4: GWDTes (EIAR Volume 3a)**, with their NVC types shown on **Figure 8.3: NVC (EIAR Volume 3a)**. Error! Reference source not found. provides further information on the potential GWDTes recorded in the Ecology Field Survey Area. **Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)** provides full details on the target notes and the full names of all NVC communities, which have been shortened here for ease.

Table 8-5: Potential GWDTes

NVC Community	Groundwater Dependency ²⁸	Area within Ecology Field Survey Area (ha)
M6c	High	155.4
M15c	Moderate	171.8

8.3.11 Two other small areas of potential GWDTes too small to map were also recorded in the Ecology Field Survey Area and are detailed in Error! Reference source not found. and shown on **Figure 8.5: Target Notes (EIAR Volume 3a)**.

²⁷ As Defined by the **Wildlife and Countryside Act 1981** (as amended by the Wildlife and Natural Environment (Scotland) Act 2012.)

²⁸ Guidance on Assessing the Impacts of Wind farm Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems: https://www.sepa.org.uk/media/143868/lupsgu31_planning_guidance_on_groundwater_abstractions.pdf [Accessed April 2020]

Table 8-6: GWDTE Target Notes

NVC Community	Groundwater Dependency ²⁹	Target Note
M6c Carex echinata – Sphagnum recurvum/auriculatum mire with Juncus effusus sub-community	High	TN8 and TN10
M15c Scirpus cespitosus - Erica tetralix wet heath with cladonia spp. sub-community.	Moderate	TN6 and TN9

8.3.12 Further information on the hydrological and hydrogeological sensitivity and an assessment of the groundwater dependency of the potential GWDTEs is provided in **Technical Appendix 11.2: GWDTE Assessment (EIAR Volume 4)**.

Protected Terrestrial Mammals

8.3.13 Target notes for protected and notable terrestrial mammals are shown on **Figure 8.5: Target Notes (EIAR Volume 3a)** and described in **Technical Appendix 8.1: Ecology Methodology and Results (EIAR Volume 4)**.

8.3.14 Pine marten scat was recorded on a forestry track within the Ecology Field Survey Area, as shown by Target Note 1 on **Figure 8.5: Target Notes (EIAR Volume 3a)** and detailed in **Technical Appendix 8.1: Ecology Methods and Results (EIAR Volume 4)**.

8.3.15 No signs of red squirrel i.e., feeding signs, scats or dreys, were recorded during the survey despite the presence of suitable habitat within the Ecology Field Survey Area.

8.3.16 No signs of wildcat were recorded, and the habitats of the Ecology Field Survey Area are largely unsuitable for breeding due to the presence of dense conifer plantation, moorland modified by farming and forestry and the lack of rocky cairns or dense scrub for den locations³⁰. However, the Ecology Field Survey Area could offer suitable habitat for foraging and commuting wildcat, with denning opportunities present in the wider Ecology Study Area.

8.3.17 No signs of other notable mammal species, including badger *Meles*, water vole *Arvicola amphibius* or otter, were recorded during surveys, though the habitats within the Ecology Field Survey Area are considered to be suitable for these species.

8.3.18 Signs of water vole were recorded during a survey visit by ERM consultants carried out in June 2022 in advance of Ground Investigation works. ERM recorded evidence of water vole on two burns between towers T17/T18 and Tower T20 near Tullich. All records occur more than 70 m from tower locations. These signs included:

- Burrow entrances;
- Latrines (dung piles to mark territories); and
- Feeding stations (chewed vegetation).

Bats

8.3.19 Nine oak trees with bat roost potential (BRP) were recorded within the Ecology Field Survey Area, three with medium BRP and three with low BRP within the area of broad-leaved Ancient Woodland along the Allt Criche and three with low BRP alongside the Erallich Water.

²⁹ Guidance on Assessing the Impacts of Wind farm Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems: https://www.sepa.org.uk/media/143868/lupsgu31_planning_guidance_on_groundwater_abstractions.pdf [Accessed April 2020]

³⁰ Wildcat Survey Methods: <https://www.nature.scot/sites/default/files/2018-04/Guidance-Wildcat-Survey-Methods.pdf> [Accessed April 2022]

Reptiles and Amphibians

- 8.3.20 No signs of reptiles or amphibians were recorded during field surveys, though the habitats within the Ecology Field Survey Area are considered to be suitable for these groups.

Future Baseline

- 8.3.21 The future baseline of the Ecology Study Area under the “do nothing” scenario is unlikely to change significantly in the absence of the Proposed Development.
- 8.3.1 The coniferous woodland plantation areas will continue to be managed principally in line with commercial objectives and woodland restructuring including felling and replanting with similar species. The native broadleaved woodland would be anticipated to remain in a similar condition in the absence of the Proposed Development. Forestry baseline and assessment is further detailed in **Chapter 14: Forestry (EIAR Volume 2)**.
- 8.3.2 Upland peatland habitats are considered unlikely to change significantly in the absence of the Proposed Development. The majority are already modified by surrounding forestry and farming practices, which are expected to continue unchanged.
- 8.3.3 Therefore, the distribution of species present within the Ecology Field Survey Area and the surrounding habitat is unlikely to change significantly in the future. Climate change may have an adverse effect on species distribution, and this could be significant depending on the severity of the effect.

Summary of Important Ecological Features

- 8.3.4 A summary of the ecological features identified as being sensitive to the potential impacts from the Proposed Development and that have been ‘scoped-in’ to the assessment are provided in **Table 8-7**, together with the rationale for their inclusion.

Table 8-7: Summary of Important Ecological Features

Feature	Importance	Rationale
Ancient and semi-natural woodland	Regional	Ancient Woodland contains remnants of Scotland’s original forests, preserving the integrity of ecological processes in the soil and its associated biodiversity. Once lost, Ancient Woodland cannot be recreated. Although no legislation specifically protects Ancient Woodland, there is a strong presumption against removing ancient semi-natural woodland or plantations on Ancient Woodland sites ³¹ . Ancient woodland is present in small, scattered areas in the region and is considered to be of regional importance.
Non-designated broadleaved and mixed native woodland habitats	Local	Woodland covers approximately 19% of Scotland, with under a quarter of these woodlands considered native ³² . The SBL33 includes terrestrial woodland habitats, including lowland mixed deciduous woodland, wet woodland, and upland birchwood. These woodland types are frequent but of limited size in the Ecology Field Survey Area. Native woodland cover is relatively scarce across the wider Ecology Study Area. All broadleaved and mixed woodlands play an important role in the ecosystem, offering shelter and foraging opportunities for a wide range of protected and notable species, including specialists and generalists. However, woodlands included in this category may range from immature to mature and have not been included on the Ancient

³¹ Scottish Planning Policy (2014): <https://www.gov.scot/publications/scottish-planning-policy/pages/2/> [Accessed April 2022]

³² Walton, P., Eaton, M., Stanbury, A., Hayhow, D., Brand, A., Brooks, S., Collins, S., Duncan, C., Dundas, C., Foster, S., Hawley, J., Kinninmonth, A., Leatham, S., Nagy-Vizitiu, A., Whyte, A., Williams, S., and Wormald, K. (2019). The State of Nature Scotland 2019. The State of Nature Partnership.

³³ The Scottish Biodiversity List (2005): <https://www.nature.scot/scottish-biodiversity-list-documents> [Accessed April 2022]

Feature	Importance	Rationale
		Woodland Inventory. As such, these woodlands are considered to be of local importance.
Peatlands (blanket bog and wet heath)	Regional (blanket bog) County (wet heath)	<p>These habitat types are included in Annex 1 of the EC Habitats Directive³⁴ and are sensitive to environmental change, such as changes to hydrology, carbon function, species composition and nutrient status. Much of the peatland habitat in the UK is in poor condition due to damage from anthropogenic activities such as drainage, grazing and peat extraction.</p> <p>The examples of blanket bog within the Ecology Field Survey Area are of varying condition and subject to modification but do include some areas of higher floral diversity. There are peatlands within Argyll and Bute in better condition than those found within the Ecology Field Survey Area. The blanket bog in the Ecology Field Survey Area supports peat-forming vegetation, a low frequency of drains/peat cutting, a natural surface pattern and an absence of woodland/scrub invasion, however it does not support indicators of national importance³⁵, such as an abundance of bog-moss-rich ridges and hummocks or hollows with brown beak-sedge <i>Rhynchospora fusca</i>. As such, this feature is considered to be of no more than regional importance.</p> <p>The wet heath within the Ecology Field Survey Area is also of varying condition, with some areas supporting peat-forming vegetation and other areas dominated by common heather <i>Calluna vulgaris</i> and deergrass <i>Trichophorum cespitosum</i>. As such, this feature is considered to be of county importance.</p>
Wetlands (potential GWDTE and marshy grassland)	County	GWDTEs are sensitive to changes in hydrology and hydrogeology and are a priority under the Water Environment and Water Services (Scotland) Act ³⁶ . The examples of these habitat types in the Ecology Field Survey Area are generally in good condition, with increased diversity and naturalness compared to the surrounding habitats, such as coniferous woodland plantation. Due to the small and fragmented patches present in the Ecology Field Survey Area, with larger expanses present elsewhere in the Ecology Study Area, this feature is considered to be of county importance.
Standing and running water	Local	Several watercourses, including the River Aray and Erallich Water, occur within the Ecology Field Survey Area. Standing and running water provides habitat for otter, water vole <i>Arvicola amphibius</i> , amphibians, fish and invertebrates. As a result, this feature is considered to be of local importance.
Pine marten	Local	<p>This species receives full protection under Schedule 5 of the Wildlife and Countryside Act 1981³⁷ and certain methods of killing or taking pine martens are illegal under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)³⁸. Pine marten is also an SBL species³⁹.</p> <p>The Mammal Society⁴⁰ reported that there has been an increase in the geographical range and population size of pine marten, with a</p>

³⁴ EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (1992): http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [Accessed April 2022]

³⁵ Advising on Carbon-rich Soils, Deep Peat and Priority Peatland Habitat in Development Management (2021): <https://www.nature.scot/doc/advising-carbon-rich-soils-deep-peat-and-priority-peatland-habitat-development-management> [Accessed April 2022]

³⁶ Water Environment and Water Services (Scotland) Act (2003): <https://www.legislation.gov.uk/asp/2003/3/contents> [Accessed April 2022]

³⁷ The Wildlife and Countryside Act (as amended) (1981): <http://www.legislation.gov.uk/ukpga/1981/69> [Accessed April 2022]

³⁸ The Conservation (Natural Habitats Etc.) Regulations (as amended) (1994): <http://www.legislation.gov.uk/uksi/1994/2716/contents/made> [Accessed April 2022]

³⁹ The Scottish Biodiversity List (2005): <https://www.nature.scot/scottish-biodiversity-list-documents> [Accessed April 2022]

⁴⁰ Mathews, F., Kubasiewicz, L.M., Gurnell, J., Harrower, C.A., McDonald, R.A., Shore, R.F. (2018), A Review of the Population and Conservation Status of British Mammals: Technical Summary. Natural England: Peterborough.

Feature	Importance	Rationale
		<p>continuous expansion in Scotland over the last 20 years, which is predicted to continue. This species favours coniferous and mixed forestry where they forage, hunt and den in trees.</p> <p>No pine marten dens were recorded in the Ecology Field Survey Area, with a single scat recorded. Given the low level of activity in the Ecology Field Survey Area, the population of pine marten is considered to be of local importance.</p>
Bats	Local	No confirmed bat presence was recorded within the Ecology Field Survey Area. However, on a largely precautionary basis nine trees have been classified as having either low or medium bat roost potential.

Effects Scoped Out

- 8.3.5 CIEEM EClA Guidelines⁴¹ state that the assessment process does not require consideration of effects on the ecological features deemed to be below a predefined nature conservation value threshold. Therefore, an assessment of the effects upon features less than local importance have been excluded from further assessment, as outline in **Table 8-8**.

Table 8-8: Ecological Features Scoped Out of Assessment

Feature	Justification
Neutral grassland	Neutral grassland is not included under legislative or conservation lists as a priority habitat type, and similar habitat is available for protected or priority species (primarily badgers) in the Ecology Field Survey Area..
Coniferous woodland plantation	All stands of coniferous woodland plantation were notably uniform and dense, with limited associated ground flora. Coniferous woodland plantation is not included under legislative or conservation lists as a priority habitat type.
Aquatic ecology	While the Proposed Development would cross a number of watercourses, the design would aim to locate towers at least 30 m from watercourses, where possible. On the basis that the construction work would be carried out following good practice mitigation for pollution prevention (such as the implementation of a Construction Environmental Management Plan (CEMP) Technical Appendix 2.2, EIAR Volume 4 , and the SSEN Transmission General Environmental Management Plans (GEMP) Technical Appendix 2.3, EIAR Volume 4 , on working in or near water) and taking a precautionary approach by assuming the presence of sensitive aquatic ecology (such as fish and freshwater pearl mussel <i>Margaritifera margaritifera</i>), significant effects associated with the Proposed Development on watercourses and aquatic ecology are unlikely.
Badger	No records of badger were recorded during April 2022 field surveys. Re-surveying for these species would be included in the standard pre-construction protected species survey, as detailed in Section 8.5 .
Wildcat	No records of wildcat were recorded and the habitats in the Ecology Field Survey Area are considered to be of low suitability for this species, therefore, it is not considered further in this assessment. However, due to the elusive nature of this species and the difficulty in identifying field signs, re-surveying for wildcat would be included in the standard pre-construction protected species survey, as detailed in Section 8.5 .
Reptiles and amphibians	No reptiles or amphibians were recorded during field surveys and, although the habitat is considered to be suitable for these species, they are not considered further in this assessment as there is not considered to be the potential for a significant effect following the application

⁴¹ CIEEM (2018), *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1. Available: <https://cieem.net/wp-content/uploads/2018/08/EClA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1.pdf> [Accessed April 2022]

Feature	Justification
	of standard mitigation measures, such as a pre-construction protected species survey and pollution prevention measures.
Terrestrial invertebrates	Surveys of this species group were considered unnecessary as the EclA adopts a precautionary approach and includes appropriate mitigation, where required, to avoid significant effects.

8.4 Assessment of Effects

8.4.1 The assessment of effects in this section considers the significance of the associated effect in the absence of mitigation, excluding mitigation that has already been undertaken e.g. mitigation by design. The assessment considers the effect of the Proposed Development on the ecological features detailed in Table 8-7.

Mitigation by Design

8.4.2 The layout of the Proposed Development has, as far as possible, been designed to avoid habitats of highest ecological importance, as detailed in **Chapter 3: Alternatives (EIAR Volume 2)**. This includes native ancient and semi-natural woodland.

8.4.3 Where it has not been possible to avoid ancient or broadleaved woodland, the Operational Corridor (OC) felling has been reduced from 85 m to 60 m (30 m either side of OHL), as to minimise felling requirement. This is detailed further in **Chapter 14: Forestry (EIAR Volume 2)**. **Technical Appendix 14.2: Native Broadleaf Management Plan (EIAR Volume 4)** sets out the methodology and process that will be followed to limit the removal of ancient and native woodland.

8.4.4 Measures already taken into account during design include features that would be incorporated into access tracks, such as culverts, to minimise the potential impacts on the hydrological characteristics of peatland and wetland habitats by maintaining hydrological connectivity between sensitive habitats. Further details of hydrological mitigation to reduce the significance of potential adverse effects on the hydrology are described in **Chapter 10: Geology and Soils** and **Chapter 11 Water Environment (EIAR Volume 2)**.

8.4.5 Information on felling, compensatory tree planting and forestry management is provided in **Chapter 14: Forestry (EIAR Volume 2)**. This chapter also details the additional good practice measures identified for implementation on land outwith the OC.

Potential Effects

Potential Construction Effects

8.4.6 The assessment of likely effects associated with construction is based on the typical activities described in **Chapter 2: Description of the Proposed Development (EIAR Volume 2)**.

Designated Sites and Habitats

Non-Statutory Designated Nature Conservation Sites - Ancient Woodland

8.4.7 Tree felling to achieve an OC on either side of the OHL and proposed access tracks could result in permanent and unavoidable loss of mature trees in an area of Ancient Woodland to the north of High Balantyre along the Allt Criche watercourse (southern end of the Proposed Development), as shown on **Figure 8.1 Ecology Constraints** and **Figure 8.2: Phase 1 Habitats (EIAR Volume 3a)**, also detailed in Error! Reference source not found. of this Chapter. **Chapter 14: Forestry (EIAR Volume 2)** provides further details on forestry loss and mitigation proposals. The final felling programme would be prepared by the construction contractor and at that stage additional mitigation for further retention of the trees in the Ancient Woodland may be possible, retaining woodland features in areas where existing tree cover does not breach safety clearances and

construction activities. However, for the purposes of this assessment and following the Precautionary Principle, it has been assumed that all trees within the OC will be felled. Ancient Woodland is considered to be an irreplaceable ecological feature and once destroyed, it cannot be recreated. As a result, the loss of Ancient Woodland is considered to be a **significant adverse effect** on a feature of regional importance.

- 8.4.8 While there is also the potential to impact habitat network connectivity through fragmentation, it is noted that the existing areas of woodland are already subject to a high level of fragmentation at the wider landscape level. The scale of fragmentation proposed (limited to 85 m in width for coniferous woodland and 60 m in width for broadleaved woodland) is considered to represent a negligible permanent effect on the basis that following reinstatement, the Proposed Development OC would be subject to a low level of habitat modification, with the retention or natural regeneration of scrub vegetation providing for species movement between habitat patches, maintaining functional connectivity. This scrub vegetation would also protect the edge habitat of the unfelled Ancient Woodland that would be exposed due to felling of the OC. It is also possible that this may have a minor beneficial effect on the ground flora of the edge habitat, which would receive more light, allowing different species to flourish. This fragmentation and edge effect is considered to be not significant.
- 8.4.9 Construction of the Proposed Development could also result in indirect disturbance of Ancient Woodland. Dust produced from increased vehicle movement could smother small plants in the ground flora and the leaves of tree species. This is considered to be a temporary, low magnitude, low frequency, short-term impact on a habitat of regional importance. This impact is considered on a small extent of the edge of the habitat, particularly as rainfall would naturally mitigate the effects and because the majority of construction activities would occur within coniferous woodland plantation present in the Ecology Field Survey Area, which would act as a natural barrier. As a result, the effect is considered to be not significant.

Sensitive Habitats (excluding GWDTEs)

- 8.4.10 Construction activities have the potential to degrade or destroy sensitive habitats either directly, through excavation, compaction, or modification (e.g., vegetation removal), or indirectly as a result of dewatering or from the accidental release of fuels, lubricants or other chemicals. The construction of tower bases and permanent access tracks would cause permanent habitat loss. The construction of temporary access tracks would cause temporary habitat degradation or loss in the short- to medium-term until habitats are reinstated following completion of the Proposed Development. The significance of these effects per habitat type is considered below.
- 8.4.11 **Table 8-9** and **Table 8-10** set out the percentage of permanent and temporary habitat loss by habitat type within the Ecology Field Survey Area, respectively. Direct habitat loss during construction includes the following:
- working areas for each tower base (approximately 2500 m² (50 m x 50 m) for section towers and 6400 m² (80 m x 80 m) for angle towers);
 - 85 m OC through coniferous woodland (40 m on either side of the Proposed Development);
 - 60 m OC through Ancient Woodland and broadleaved woodland (30 m on either side of the Proposed Development); and
 - 20 m felling corridor for permanent and temporary access tracks (with a minimum running width of 4.5 m).
- 8.4.12 Indirect habitat modification is calculated as impacting a 15 m buffer around areas of direct woodland habitat loss⁴² and a 10 m buffer around the areas of direct loss in other habitats as this is considered to represent the worst-case scenario of habitat that is likely to be indirectly modified by the Proposed Development.

⁴² Ancient Woodland, Ancient Trees and Veteran Trees: Advice for Making Planning Decisions (2022): <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions> [Accessed March 2022]

Table 8-9: Permanent Habitat Loss from Proposed Development During Construction

		Direct Habitat Loss		Indirect Habitat Modification/Degradation	
Habitat	Total Habitat in Ecology Field Survey Area (ha)	Area Lost (ha)	Percentage Lost ⁴³ (%)	Area Modified (ha)	Percentage Modified (%)
Ancient Woodland	165.14	0.34	0.21	0.09	0.05
A1.1.1 Semi-natural Broadleaved Woodland	77.61	4.39	5.66	4.70	6.06
A1.1.2 Broadleaved woodland-plantation	11.26	2.47	21.85	1.70	15.10
A1.3.1 Mixed woodland-semi-natural	37.54	5.33	14.20	1.70	4.53
B2.2 Neutral grassland-semi-improved	4.94	0.17	3.44	0.13	2.63
B5 Marshy Grassland	68.01	3.80	5.59	1.57	2.31
C1.1 Bracken-continuous	7.29	0.30	4.12	0.42	5.76
D2 Wet Dwarf shrub heath	171.83	17.66	10.28	7.70	4.48
E1.6.1 Blanket sphagnum bog	87.35	14.99	17.16	8.28	9.48
Totals	630.97	49.45	8.02	26.29	4.56

⁴³ This is a percentage of the habitat within the Ecology Field Survey Area.

Table 8-10: Temporary Habitat Loss from Proposed Development During Construction

		Direct Habitat Loss			Indirect Habitat Modification/Degradation	
Habitat	Total Habitat in Ecology Field Survey Area (ha)	Area Lost (ha)	Percentage Lost (%)	Area Modified (ha)	Percentage Modified (%)	
B5 Marshy Grassland	68.01	0.18	0.26	0.56	0.82	
C1.1 Bracken-continuous	7.29	0.12	1.65	0.46	6.31	
D2 Wet Dwarf shrub heath	171.83	0.90	0.52	3.16	1.84	
E1.6.1 Blanket sphagnum bog	87.35	0.43	0.49	1.59	1.82	
Totals	334.48	1.63	0.49	5.77	1.73	

Woodland

- 8.4.13 Without consideration of mitigation, the permanent loss or degradation of Ancient Woodland would comprise 0.43 ha⁴⁴ (0.39%) of the total recorded in the Ecology Field Survey Area. Although this is extremely low, Ancient Woodland is considered to be an irreplaceable ecological feature and once destroyed, it cannot be recreated. As such the loss of Ancient Woodland is considered to be a **significant adverse effect** on a habitat of regional importance.
- 8.4.14 Without consideration of mitigation, the permanent loss or degradation of non-designated broadleaved woodland would comprise 13.26 ha (14.92%) of the total recorded in the Ecology Field Survey Area. The loss of broadleaved woodland is considered to be an adverse effect at the local level because broadleaved woodland is of high ecological value and provides habitat for a range of other ecological features. However, this effect is considered to be not significant in EIA terms as it is a small proportion of a feature of local importance and includes broadleaved plantation woodland. The effects on ecological features using the broadleaved woodland, such as bat species, are considered below.
- 8.4.15 Without consideration of mitigation, the permanent loss or degradation of non-designated mixed woodland would comprise 7.03 ha (18.73%) of the total recorded in the Ecology Field Survey Area. The loss of mixed woodland is considered to be an adverse effect at the local level because semi-natural woodland is of high ecological value and provides habitat for a range of other ecological features. However, this effect is considered to be not significant in EIA terms as it is a small proportion of a feature of local importance in context.
- 8.4.16 Temporary habitat loss is considered to be permanent in areas of woodland since this habitat cannot be immediately reinstated following construction, unlike other habitats, such as blanket bog whereby peat turves can be stored and replaced. Once woodland is felled, replacement depends on planting and a large time interval long-term natural regeneration. Compensatory woodland planting is detailed in **Technical Appendix 14.3: Compensatory Planting Management Strategy (EIAR Volume 4)**. Recommendations for

⁴⁴ Chapter 11: Forestry only considers the direct loss of Ancient Woodland, whereas Chapter 6: Biodiversity considers direct and indirect loss of Ancient Woodland but also the direct and indirect loss of non-designated broadleaved woodland. This has resulted in a compensatory planting area that is higher than the area of woodland loss considered in the forestry chapter. The ecology chapter incorporates the worst-case scenario of all Ancient Woodland and non-designated broadleaved woodland loss.

woodland enhancement and creation are also provided in **Technical Appendix 6.3: Outline Habitat Management Plan (EIAR Volume 4)**.

- 8.4.17 While there is also the potential to impact on habitat connectivity through fragmentation, it is noted that the existing areas of woodland are subject to a relatively high level of fragmentation at the wider landscape level. The scale of fragmentation proposed (limited to 60 m in Ancient Woodland and non-designated woodland and by 85m in coniferous woodland) is considered to represent a negligible permanent effect on the basis that following reinstatement, the Proposed Development wayleave would be subject to a low level of habitat modification, with scrub vegetation providing for species movement between habitat patches, maintaining functional connectivity. This fragmentation effect is considered to be not significant.

Peatland

- 8.4.18 Without consideration of mitigation, the permanent loss or degradation of blanket bog would comprise 23.27 ha (26.64% of the total recorded in the Ecology Field Survey Area). The temporary loss of this habitat type is likely to be approximately 2.02 ha (2.31% of the total recorded in the Ecology Field Survey Area). As blanket bog is an Annex 1 habitat⁴⁵ and much of the blanket bog in Scotland is in poor condition, further loss or degradation of this feature is considered to be an adverse effect on a feature of regional importance. As the predicted permanent loss or degradation of blanket bog would comprise almost a quarter of the total area within the Ecology Field Survey Area, this is considered to be a **significant adverse effect** on a 23.27ha of sensitive Annex 1 habitat type, of which is of county level importance.
- 8.4.19 Without consideration of mitigation, the permanent loss or degradation of wet dwarf shrub heath would comprise 25.36 ha (14.76%) of the total recorded in the Ecology Field Survey Area. The temporary loss of this habitat type would be 3.25 ha (1.89%) of the total recorded in the Ecology Field Survey Area. As wet heath is an Annex 1 habitat⁴⁶, loss of this feature is considered to be an adverse effect on a feature of county importance. This would be a moderate magnitude, short-term and reversible adverse impact involving almost 15% of the habitat present in the Ecology Field Survey Area. This is considered to be a **significant adverse effect** on a sensitive Annex 1 habitat type.

Marshy Grassland

- 8.4.20 Without consideration of mitigation, the permanent loss or degradation of marshy grassland would comprise 5.37 ha (7.90%) of the total recorded in the Ecology Field Survey Area. The temporary loss of this habitat would be 0.74 ha (1.09%) of the total Ecology Field Survey Area. This would be a low magnitude adverse impact involving a small extent of the habitat present in the Ecology Field Survey Area and, therefore, would still leave functioning habitat. As a result, the effect is considered to be not significant.

Standing and Running Water

- 8.4.21 Due to the proximity of standing and running water to the Proposed Development, there is potential for pollution or surface water run-off to enter this habitat. Although the magnitude and duration of the impact would depend on the nature of the pollution event, based on a precautionary approach, it has been considered to result in an adverse effect on a feature of local importance, but this effect is considered to be not significant, particularly as the effect would be localised to watercourse crossing areas, with most standing or running water habitat protected from construction activities by a 30 m buffer. Details on the number of watercourses that are within and outwith the 30 m watercourse buffer are detailed in **Chapter 11: Water (EIAR Volume 2)** and in **Technical Appendix 11.1 Watercourse Crossing Assessment (EIAR 4)**.

⁴⁵ EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (1992): http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm
[Accessed August 2021]

⁴⁶ *Ibid.*

GWDTE

8.4.22 **Table 8-11** and **Table 8-12** set out the percentage of permanent and temporary loss of potential GWDTEs within the Ecology Field Survey Area, respectively. Further information on the hydrological and hydrogeological sensitivity and an assessment of the groundwater dependency of the potential GWDTEs is provided in **Technical Appendix 11.2: Ground Water Dependent Terrestrial Ecosystems (EIAR Volume 4)**.

Table 8-11: Permanent Loss of Potential GWDTEs from Proposed Development During Construction

		Direct Habitat Loss		Indirect Habitat Modification/Degradation	
Habitat	Total Habitat in Ecology Field Survey Area (ha)	Area Lost (ha)	Percentage Lost (%)	Area Modified (ha)	Percentage Modified (%)
High	254.20	18.79	7.39	9.85	3.87
Moderate	171.83	17.66	10.28	7.70	4.48
Totals	426.03	36.45	8.56	17.55	4.12

Table 8-12: Temporary Loss of Potential GWDTEs from Proposed Development During Construction

		Direct Habitat Loss		Indirect Habitat Modification/Degradation	
Habitat	Total Habitat in Ecology Field Survey Area (ha)	Area Lost (ha)	Percentage Lost (%)	Area Modified (ha)	Percentage Modified (%)
High	254.20	0.61	0.24	2.16	0.85
Moderate	171.83	0.90	0.52	3.16	1.84
Totals	426.03	1.51	0.35	5.32	1.25

8.4.23 Without consideration of mitigation, the permanent loss or degradation of high GWDTE and moderate GWDTE would comprise 28.64 ha (11.27%) and 25.36 ha (14.75%) of that recorded in the Ecology Field Survey Area, respectively. The temporary loss or degradation of high GWDTE and moderate GWDTE would comprise 2.77 ha (1.09 %) and 3.25 ha (1.89 %) of the total recorded in the Ecology Field Survey Area, respectively. However, it is noted that impacts associated with the tower foundation excavations would be of a short-term nature during the construction works. There would be no long-term hydrological and hydrogeological effects on the potential GWDTE habitat within 250 m of tower foundation excavations on the basis that, following construction and reinstatement, the tower foundations would be an impermeable subsurface feature and would not create artificial preferential drainage pathways within the potential GWDTE habitat. There would be no indirect impacts associated with the proposed access tracks on the basis that all tracks within 100 m of potential GWDTE habitat would be of floating construction, where possible, as detailed in **Section 8.5**. Overall, this represents a small area of habitat loss and low magnitude impact in the context of the wider Ecology Study Area. On this basis, effects on the potential GWDTEs are considered to be not significant.

Protected Species

Otter and Water Vole

- 8.4.24 Otter is classified as a European Protected Species (EPS) under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)⁴⁷. Otter is also an SBL species⁴⁸. Although no signs of otter were recorded during the 2022 surveys on any water courses, it is noted that the Proposed Development occurs within 10 km of Loch Etive Woods SAC, of which is notified for otter. Otter can travel up to 20 km between water courses and water bodies, Loch Etive Woods SAC is situated 6.6 km north of the Proposed Development, therefore indirect impacts are possible.
- 8.4.25 No water vole burrows, otter holts or otter couches would be disturbed or destroyed during construction. A minimum 50 m buffer has been used around watercourses except where watercourse crossings are required. Construction activities may, therefore, disturb water vole and/or otter foraging and commuting along watercourses as a result of noise, vibration, pollution, bankside habitat loss at watercourse crossings, or artificial lights. A small area of habitat is likely to be lost but is unlikely to extend beyond 15 m along the watercourse at each watercourse crossing. Approximately 60 watercourse crossings (including existing crossings) would be required to construct the Proposed Development. Full details of conceptual watercourse crossing locations and designs are provided in **Technical Appendix 11.1: Watercourse Crossing Assessment (EIAR Volume 4)**. Disturbance would be localised to watercourse crossings and would be a short-term, low magnitude impact on this species. As a result, the effect of construction of the Proposed Development on otter is considered to be not significant.
- 8.4.26 Pollution from the accidental release of fuels, lubricants or other chemicals as well as changes in drainage patterns and silt released into aquatic habitats could directly affect water vole and otter. through contact with corrosive substances or by coating fur or indirectly by affecting their food supply. However, this would typically occur at watercourse crossing areas. The magnitude and duration of the impacts would depend on the nature of the pollution event however, based on a precautionary approach, it could result in a **significant adverse effect** on ecological features of local importance.

Pine Marten

- 8.4.27 This species receives full protection under Schedule 5 of the Wildlife and Countryside Act 1981⁴⁹ and certain methods of killing or taking pine martens are illegal under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)⁵⁰. Pine marten is also an SBL species⁵¹. A spraint was recorded during field surveys on one of the forestry tracks, suggesting that this species is present within the Proposed Development area. Construction of the Proposed Development would result in the permanent loss of some woodland suitable for use by pine marten. This is considered to be a low magnitude impact in the context of the available habitat resource remaining in the Ecology Field Survey Area and in the wider Ecology Study Area. Construction activity would also likely have a localised, low magnitude disturbance impact on these species that use the Ecology Field Survey Area at a low level. As a result, the effect of construction on pine marten is considered to be not significant.

Red Squirrel

- 8.4.28 No protected red squirrel dreys would be disturbed, destroyed or damaged during construction. Construction of the Proposed Development would result in the permanent loss of some woodland suitable for use by red squirrel. However, this is considered to be a low magnitude impact in the context of the available habitat resource remaining in the Ecology Field Survey Area and in the Study Area. Construction activity would also likely have a localised, low magnitude disturbance impact on these species that may use the Ecology Field

⁴⁷ The Conservation (Natural Habitats Etc.) Regulations (as amended) (1994): <http://www.legislation.gov.uk/uksi/1994/2716/contents/made> [Accessed August 2021]

⁴⁸ The Scottish Biodiversity List (2005): <https://www.nature.scot/scottish-biodiversity-list-documents> [Accessed August 2021]

⁴⁹ The Wildlife and Countryside Act (as amended) (1981): <http://www.legislation.gov.uk/ukpga/1981/69> [Accessed August 2021]

⁵⁰ The Conservation (Natural Habitats Etc.) Regulations (as amended) (1994): <http://www.legislation.gov.uk/uksi/1994/2716/contents/made> [Accessed August 2021]

⁵¹ The Scottish Biodiversity List (2005): <https://www.nature.scot/scottish-biodiversity-list-documents> [Accessed August 2021]

Survey Area at a low level. As a result, the effect of construction on red squirrel is considered to be not significant.

Bats

- 8.4.29 No protected bat roosts were confirmed to be present within the Ecology Field Survey Area. However, nine oak trees with BRP were identified. Six trees in the Ancient Woodland along the Allt Criche with either low or medium BRP and three with low BRP along the Erallich Water could be disturbed, destroyed or damaged during construction. Construction of the Proposed Development would also result in the permanent loss of some woodland suitable for use by foraging bats. However, this is considered to be a low magnitude impact in the context of the available habitat resource remaining in the Ecology Field Survey Area and in the Study Area. Construction activity would also likely have a localised, low magnitude disturbance impact on these species that may use the Ecology Field Survey Area at a low level. The loss of a bat roost feature that was in use would be a significant effect at a local level, but that would not constitute a significant effect for the purposes of EIA. As a result, the effect of construction on bats is considered to be not significant.

Reptiles and Amphibians

- 8.4.30 Construction activities could result in the direct disturbance or injury/accidental death of individual reptiles and amphibians (e.g., from vehicle collisions). Construction activities could also have the potential to degrade or destroy reptile and amphibian habitat either directly (e.g., from excavation, compaction, or habitat modification) or indirectly (e.g., from dewatering, or from the accidental release of fuels, lubricants or other chemicals). Some activities could cause permanent degradation or destruction, for example where tower bases are constructed or permanent new access tracks are formed, but in most cases, impacts would be temporary and negligible magnitude due to the small area of habitat involved, and on common and low-sensitivity species groups. As a result, the effects are considered to be not significant.

Potential Operational Effects

- 8.4.31 During operation of the Proposed Development, maintenance activities would involve regular inspections to identify deterioration or damage. If conductors are damaged, short sections may have to be replaced. Insulators and conductors are normally replaced after about 40 years, and towers painted every 15-20 years. The vegetation within the OC would also be managed to maintain the required safety clearance (80 m corridor, reduced to 60 m in certain areas and further reduced where possible). Periodic vegetation management within the OC will also be required throughout the operational lifetime of the Proposed Development. A felling corridor (20 m) will also be required around permanent access tracks. In all cases, maintenance activities would access the Proposed Development from permanent access tracks established during construction. As a result, effects from maintenance activities are considered to be not significant.

8.5 Mitigation

Mitigation During Construction

- 8.5.1 In the absence of mitigation, significant effects are predicted on:
- Ancient Woodland;
 - peatlands (wet heath and blanket bog); and
 - Water vole and Otter.
- 8.5.2 Specific mitigation for these features or the habitats that support them, is provided below. No specific mitigation is required for the other ecological features; however, the Applicant would implement a suite of standard good practice working measures that would provide additional protection. These are summarised below and would be detailed in the CEMP.

Ancient Woodland

Sensitive Felling and Compensatory Woodland Planting

- 8.5.3 The permanent loss of Ancient Woodland as part of the Proposed Development would be minimised, where possible, through the OC having a maximum width of 60 m (reduced from the standard 85 m) and further during construction through selective felling during operation and maintenance. The 0.34 ha of Ancient Woodland impacted by the Proposed Development is situated within a deeply incised gully along the Allt Criche watercourse. The large oak trees which dominate the habitat are mature and unlikely to grow any taller. Where possible the applicant will seek to retain woodland features in areas where existing tree cover does not breach safety clearances and construction activities.
- 8.5.4 Micrositing of access tracks and micrositing of towers would also be undertaken, where possible, to avoid felling. The loss would also be minimised by retaining scrub, understorey layers and minimising disturbance of the soils in areas where existing tree cover does not breach safety clearances. In addition, the Applicant would seek to manage the OC to encourage native scrub vegetation through natural regeneration and/or planting.
- 8.5.5 Further details of the compensatory woodland planting required following tree felling and other mitigation proposals are provided in **Chapter 14: Forestry (EIAR Volume 2)**. Recommendations for woodland enhancement and creation are also provided in **Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4)**.

Peatlands

- 8.5.6 Active restoration of the peatland habitats in the Ecology Field Survey Area would be carried out in line with **Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4)** and would be secured by planning condition. Active restoration is defined here as the process of actively encouraging the regeneration of degraded peatland habitats. Degraded peatland habitats are those that are reduced in quality. In order to account for the loss and degradation of wet heath and blanket bog, a minimum area of peatland would be restored in areas of damaged peat that no longer contain a significant proportion of peat-forming vegetation. As a good practice measure, a further area of peatland would be restored to account for the area of blanket bog being temporarily lost and degraded as a result of the Proposed Development. Total area proposed for restoration, on and offsite, would be agreed following consultation with NatureScot. The overall aim would be to restore a larger area of peatland than the area lost. This would mitigate the permanent and temporary loss and modification of peatland as a result of the Proposed Development.
- 8.5.7 There is also the opportunity for habitat enhancement, as detailed in **Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4)**.

Water Vole and Otter

Standard Pollution Prevention Measures

- 8.5.8 Pollution control measures would be in place to protect watercourses and control the flow of any run-off from construction or operational activities. These would follow SEPA Guidelines for Water Pollution Prevention from Civil Engineering Contracts⁵² and Special Requirements⁵³. Pollution control measures would be included in the Outline CEMP (**Technical Appendix 2.2: Outline Construction and Environmental**

⁵² Prevention of Pollution from Civil Engineering Contracts: Guidelines for the Special Requirements (2006): https://www.sepa.org.uk/media/152220/wat_sg_31.pdf [Accessed October 2021]

⁵³ Prevention of Pollution from Civil Engineering Contracts: Special Requirements (2006): https://www.sepa.org.uk/media/152233/wat_sg_32.pdf [Accessed October 2021]

Management Plan (EIAR Volume 4) and the relevant SSEN Transmission GEMPs (**Technical Appendix 2.3, EIAR Volume 4**).

8.5.9 Further detail on water management and maintaining hydrological connectivity is provided below.

CEMP

8.5.10 The OCEMP would be updated following the determination of the application for s37 consent and would include an outline of the proposed approach to construction methods and environmental protection during all aspects of the construction phase. SSEN Transmission Species Protection Plans (SPPs) would form part of the OCEMP. These require pre-construction protected species surveys to be undertaken (see below).

8.5.11 A suitably qualified and experienced Environmental Clerk of Works (ECoW) would be employed to input into the CEMP and oversee the implementation of surface water management and ecological mitigation measures during construction. A OCEMP is provided in **Technical Appendix 2.2: Outline Construction and Environmental Management Plan (EIAR Volume 4)**.

Pre-construction Protected Species Survey

8.5.12 SSEN Transmission SPPs (**Technical Appendix 2.4: SSEN Transmission Species Protection Plans (SPP), EIAR Volume 4**) would be followed during construction of the Proposed Development. In implementing the SPPs, a pre-construction protected species survey would be undertaken as close to the construction period as possible, and no more than three months before the start of works⁵⁴. The protected species surveys undertaken to inform the EIA Report can be used to inform the pre-construction surveys and all species with potential to be present would be surveyed for, not just those previously recorded within the Ecology Field Survey Area. A suitably qualified ecologist would be appointed to undertake this survey.

8.5.13 In particular, preconstruction bat roost surveys on any BRP trees identified as requiring felling would be undertaken. Given the location of these trees, it is unlikely to be possible for all trees to be climbed and inspected and if so, emergence activity surveys may be required.

Standard Good Practice Working Measures

Habitat Reinstatement

8.5.14 Areas of temporary infrastructure, such as access tracks and tower bases, would be reinstated as soon as possible after construction has been completed to allow the recolonisation of natural habitats, particularly in areas of blanket bog and wet heath, as detailed in the phased programme in **Chapter 2: Description of the Proposed Development (EIAR Volume 2)**. Permanent access tracks would not be narrowed or graded to encourage scrub or vegetation growth as access is required for maintenance purposes. Further details on the proposed approach to habitat reinstatement would be set out in the CEMP and the principal contractor would be required to provide a habitat reinstatement plan prior to the start of reinstatement works. The methodology for peatland reinstatement is also detailed in **Technical Appendix 10.2: Outline Peat Management Plan (EIAR Volume 4)** and in **Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4)**.

⁵⁴ Planning and Development: Protected Species: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species> [Accessed December 2021]

Micrositing

- 8.5.15 Micrositing of towers, access tracks and/or the configuration of the construction working areas around towers, within the Proposed Development would seek to avoid localised ecological sensitivities wherever possible. This would include, but would not be limited to:
- Maximising the distance of the Proposed Development from areas of Ancient Woodland to minimise the felling required for access track construction and for safety clearances; and
 - Minimising the extent of construction work within wetland and peatland habitat, including GWDTEs.

Maintaining Hydrological Connectivity

- 8.5.16 **Figure 8.4: GWDTE (EIAR Volume 3a)** shows the relevant 100 m and 250 m buffer zones around infrastructure whereby a 100 m buffer zone is required for excavations less than 1 m (such as for access tracks) and a 250 m buffer zone is required for excavations greater than 1 m (such as for tower foundations).
- 8.5.17 Suitable drainage and surface water measures would be used to maintain hydrological connectivity in peatland habitats, particularly blanket bog and wet heath, and in GWDTEs. This would include measures such as diverting drainage around working areas and maintaining hydrological connectivity in track design by using small diameter pipes in the sub-base. Where it is not possible to avoid routeing access tracks through GWDTEs, or within a 100 m buffer zone of GWDTEs, a floating track construction would be used. The track design would have due regard to key principles set out in the joint SNH/FCS guide to floating roads on peat⁵⁵. Where there is no clearly defined channel flow through GWDTEs, track construction would use a floating construction that incorporates measures such as a porous granular rock fill blanket, non-alkaline porous layer and perforated pipes to maintain the flow connectivity across tracks.
- 8.5.18 Where tower foundations are required within a 250 m buffer zone, up gradient of identified GWDTEs, the Applicant would give consideration, subject to detailed geotechnical investigation and foundation design, to alternative tower foundation techniques, such as mini-piles. This would involve less ground disturbance when compared to conventional foundations, potentially using a floated piling platform and no open excavation.
- 8.5.19 Where conventional foundation excavations are required within a 250 m buffer zone, up gradient of identified GWDTEs, the quality and quantity of the groundwater that feeds the GWDTEs downstream from the excavations would be maintained by over-pumping and dewatering of excavations discharged to ground (via suitable pollution prevention measures) in a suitable location close to the excavation.
- 8.5.20 Greenfield run-off (i.e., non-silty surface water flow that has not yet passed over any disturbed construction areas) would be kept separate from potentially contaminated water from construction areas, where possible. Where appropriate, interceptor ditches and other drainage diversion measures would be installed immediately in advance of any excavation works in order to collect and divert greenfield run-off around areas disturbed by construction activities. All surface water within disturbed areas would be managed in accordance with sustainable drainage system techniques, using a multi-tiered approach to provide both flow attenuation and treatment through infiltration, where possible, and physical filtration prior to discharge.
- 8.5.21 Ditches would follow the natural flow of the ground with a generally constant depth to ditch invert. They would have shallow longitudinal gradients, where possible. Regular check-dams would be used where necessary to control the rate of run-off. The ditches would be designed to intercept any stormwater run-off and to allow clean water flows to be transferred independently through the works without mixing with construction drainage. The regular interception and diversion of clean run-off around infrastructure would prevent significant disruption to shallow groundwater flow and peatland. This would also reduce the flow of

⁵⁵ Floating Roads on Peat (2010): <http://www.roadex.org/wp-content/uploads/2014/01/FCE-SNH-Floating-Roads-on-Peat-report.pdf> [Accessed October 2021]

water onto any exposed areas of rock and soil, thereby reducing the potential volume of silt-laden run-off requiring treatment.

8.5.22 Greenfield run-off would be discharged into an area of vegetation for dispersion or infiltration, mimicking natural flows, so as not to alter downstream hydrology or soil moisture characteristics.

8.5.23 Further details can be found in Chapter 10: Geology and Soils (EIAR Volume 2) and also Chapter 11: Water Environment (EIAR Volume 2).

Water Vole and Otter

8.5.24 Where possible, watercourse crossings would be suitably designed to allow continued water vole and otter movement along watercourses and would minimise riparian habitat loss. Full details of conceptual watercourse crossing design is provided in **Technical Appendix 11.1: Watercourse Crossing Assessment (EIAR Volume 4)**.

Pine Marten

8.5.25 The installation of artificial den boxes for pine marten may mitigate the main source of human conflict with this species and encourage breeding success in areas where pine martens are known to be present. A level of pine marten activity was recorded in the Ecology Field Survey Area through the presence of scat. As such, an opportunity for enhancement exists through the deployment of den boxes within the coniferous woodland plantation in the Ecology Field Survey Area. Installation would follow good practice guidance⁵⁶, with the boxes installed in areas of long-term woodland retention away from public roads. Each box would be fitted to a tree at a minimum height of 4 m to avoid disturbance.

Other Protected Species Enhancements

8.5.26 The opportunity exists to enhance the Ecology Field Survey Area for bats, reptiles and amphibians, as detailed in **Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4)**. The provision of roost boxes for bats and artificial refugia for reptiles and amphibians could have a beneficial effect by providing further sheltering opportunities.

Mitigation During Operation

8.5.27 No significant effects are predicted and, consequently, no mitigation is required.

8.6 Residual Effects

Residual Construction Effects

8.6.1 The majority of habitats would be reinstated following completion of the Proposed Development, resulting in an adverse effect for the short- to medium-term, approximately five to ten years, until habitats (excluding woodland) have re-established. Permanent habitat loss would occur in peatlands and potential GWDTEs due to the excavation of access tracks, but this effect is considered to be of low magnitude providing the successful and adequate habitat restoration and reinstatement. As a result of the reduction in magnitude of impact as much of the habitat will recover in the short to medium term, no significant residual effects are predicted on these habitat types of regional or county level.

8.6.2 Following completion of the Proposed Development (including reinstatement work), residual adverse effects are anticipated for the long-term (approximately 10 to 20 years) until woodland has re-established.

⁵⁶ Croose, E., Birks, J.D.S and Martin, J. (2016), *Den Boxes as a Tool for Pine Marten Martes martes Conservation and Population Monitoring in a Commercial Forest in Scotland*. Conservation Evidence (13), pp. 57-61.

Woodland planting for Ancient Woodland is not a like-for-like replacement as Ancient Woodland is considered to be an irreplaceable resource. Compensatory planting areas are likely to establish and become a functional young woodland over at least 50 years. However, it would take far longer to provide a comparable offset for the loss of Ancient Woodland. As a result, a long-term **significant adverse residual effect** would remain for the loss of Ancient Woodland until such time as the replacement woodland areas are fully established and functional (likely to be in excess of 100 years). The applicant will seek to retain woodland features in areas where existing tree cover does not breach safety clearances and construction activities however for the purposes of this assessment, following the Precautionary Principle, the conclusion is that the effect is significant

- 8.6.3 Implementation of the proposed CEMP would avoid likely adverse effects from pollution events on habitats, water vole and otter and disturbance to pine marten, with no residual effects.

Residual Operational Effects

- 8.6.4 There would be no significant effects pre-mitigation and, consequently, no residual effects would occur.

8.7 Cumulative Effects

- 8.7.1 This section considers the potential for cumulative effects on ecological features from those proposed, applied, under construction and consented schemes closest to the Ecology Field Survey Area by first describing the known conditions on each of those sites and then summarising the cumulative effect with the Proposed Development. **Table 8-13** outlines the cumulative developments that could result in cumulative effects on ecological features in combination with the Proposed Development. These cumulative developments occur within 15 km and are in the same ZOI as the Proposed Development.

Table 8-13: Development Considered in Cumulative Assessment

Name	Distance from Proposed Development (km)
Consented (not yet constructed)	
Blarghour Wind Farm	To the west, partly within foot print of Proposed Development
Consented (under construction)	
Inveraray to Crossaig 275 kV OHL reinforcement	To the south, within footprint of Proposed Development
Consented (operational)	
An Suidhe Wind Farm	To the west, approximately 7 km from the Proposed Development.
Beinn Ghlas Wind Farm	To the north west, approximately 12 km from the Proposed Development.
Carraig Gheal Wind Farm	To the west, approximately 10 km from the Proposed Development.
Clacan Flats Wind Farm	To the east, approximately 10 km from the Proposed Development
Reasonably Foreseeable	
Blarghour OHL Connection	To the west, partly within footprint of Proposed Development
Carr Dubh Wind Farm	To the west, approximately 10 km from the Proposed Development
Ladyfield Wind Farm	500 m east of the Proposed Development
Proposed Creag Dhubh to Dalmally 275 kV OHL	To the north, within the footprint of the Proposed Development
Proposed Creag Dhubh substation for the proposed Creag Dhubh to Dalmally 275 kV Connection wider project	To the north, within the footprint of the Proposed Development
Temporary Diversion of OHL during Construction of Proposed Creag Dhubh Substation	To the north, within the footprint of the Proposed Development
Proposed ITE/ITW tie-in with temporary diversion at Creag Dhubh	To the north, within the footprint of the Proposed Development
Other Developments	
Creagan and Cabrach Long Term Forest Plan	7.5 km north east
River Aray Hydro Connection	1.5 km south

8.7.2 EIA Reports and other relevant environmental reports, such as survey reports, for nearby developments were consulted, and relevant details are presented below.

Consented (not yet constructed)

Blarghour Wind Farm

8.7.3 The wind farm was consented in October 2021 following an appeal, with the initial objection related to significant impacts on nationally important peatland. The objection was removed through demonstrating

that the design of the development had avoided the most sensitive peatland locations and that significant effects would be overcome by siting, design and the controls imposed by conditions on the construction methods and future land management.

- 8.7.4 The proposed grid connection that would connect the wind farm to the new Creag Dhubh substation via approximately 10 km of OHL by 2025 is also reasonably foreseeable. However, there is currently no information in the public domain as consultation is to be undertaken in May 2022. It is likely that the proposed grid connection will lead to further peatland loss, and potential further loss of Ancient Woodland.
- 8.7.5 The Blarghour OHMP details a series of habitat enhancement and restoration measures which includes peatland restoration namely by the reduction of grazing pressure to allow for the revegetation of degraded areas of peat. Restoring the peatland landscape within the Blarghour Wind Farm area should contribute to the health of the peatland landscape as whole.
- 8.7.6 It is likely that the loss of peatland, including where the Proposed Development crosses the Blarghour OHMP area in combination with the loss from the Proposed Development would amount to a combined percentage of habitat loss that is considered to be **significant**. As such it will be necessary to consider mitigation (i.e. peatland restoration) within the Proposed Development area in combination with mitigation required within the Blarghour OHMP. There is ongoing consultation with NatureScot to agree a proportionate approach to restoration of land already considered as mitigation for Blarghour. Alternative restoration areas may be considered to offset any loss within the Blarghour area as a result of the Proposed Development.

Consented (under construction)

Inveraray to Crossaig 275 kV OHL Reinforcement

- 8.7.7 The project was consented in July 2019. Phase 1 of this project has been constructed between Inveraray and Lochgilphead. Phase 2 between Lochgilphead and Crossaig is currently under construction. The area is dominated by coniferous woodland plantation, semi-natural broadleaved woodland and marshy grassland. Protected species surveys recorded badger setts, a water vole burrow, otter couches, pine marten and red squirrel activity, common lizard, common frog, and common toad.
- 8.7.8 The potential impacts considered are loss of Ancient Woodland, Bat Roost Potential (BRP) trees, peatland, and GWDTEs and disturbance of badger, otter, pine marten, and red squirrel, however determined to be non-significant.
- 8.7.9 It is likely that the loss of Ancient Woodland, trees, peatland, and GWDTEs in combination with the losses from the Proposed Development would amount to a **significant effect** given the potential for permanent impacts on irreplaceable habitats (Ancient Woodland) and sensitive habitats (peatlands and GWDTE) all of which are of county to regional importance. .

Consented (Operational)

An Suidhe Wind Farm

- 8.7.10 A 24 turbine wind farm to the west of Inveraray, approximately 7 km west of the Proposed Development. Insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Beinn Ghlas Wind Farm

- 8.7.11 A 16 turbine wind farm approximately 12 km to the north west of the Proposed Development. Insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Carraig Gheal Wind Farm

- 8.7.12 A 20 turbine wind farm approximately 10 km to the west of the Proposed Development. Insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Clachan Flats Wind Farm

- 8.7.13 A nine turbine wind farm approximately 10 km to the east of the Proposed Development. Insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Reasonably Foreseeable

Blarghour OHL Connections

- 8.7.14 This project is in the pre-planning process and is reasonably foreseeable as part of the Argyll and Kintyre 275 kV Strategy. This would connect the consented Blarghour Wind Farm to the proposed Creag Dhubh substation, and therefore would connect into the northern extent of the Proposed Development. Surveys for this project are likely ongoing, but it is assumed that a similar suite of habitats are present along with a similar suite of protected species to those observed during surveys for the Proposed Development.

Carr Dubh Wind Farm

- 8.7.15 This proposed wind farm currently comprises up to 26 turbines situated approximately 7 km west of the Proposed Development. A Scoping Report was prepared and submitted in March 2021. Transmission connection options are still under review. The area is dominated by open expanses of undulating blanket bog and wet heath habitat. The site is considered largely unsuitable for protected species aside from water vole. A full EIA has not yet been undertaken for this site as of July 2022. As such, insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Ladyfield Wind Farm

- 8.7.16 A 22 turbine wind farm approximately 500 m east of the Proposed Development. A Scoping Report was prepared and submitted in June 2021. The Application is due to be submitted in summer 2022. Insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

Proposed Creag Dhubh to Dalmally 275 kV OHL

- 8.7.17 This OHL is at the submission stage and will run between the proposed Creag Dhubh substation (at the northern terminus of the Proposed Development) connecting into the Dalmally to Inverarnan 275 kV OHL at its northern end.
- 8.7.18 The Field Survey Area for this project was surveyed between 2016-2021. The dominant habitats are coniferous woodland plantation, wet modified bog and semi-improved acid grassland. Potential GWDTes were recorded throughout the Field Survey Area. Protected species surveys identified the presence of BRP trees, badger, water vole, otter, pine marten, red squirrel, common lizard, common frog, and common toad.
- 8.7.19 Without the application of mitigation, **significant effects** are predicted on Ancient Woodland, peatland (wet heath and flushes), BRP trees, water vole, and otter. Significant cumulative effects are also predicted on Ancient Woodland between the surrounding cumulative developments and the Proposed Development.

Proposed Creag Dhubh Substation for the Proposed Creag Dhubh to Dalmally 275 kV Connection Wider Project

- 8.7.20 Located at the northern end of the Proposed Development. The area is dominated by coniferous woodland plantation. Protected species surveys recorded water vole burrows and pine marten activity.
- 8.7.21 The further loss of coniferous woodland plantation is considered to be not significant due to its low biodiversity value. Given the likely use of a 30 m watercourse buffer, water vole are also unlikely to be disturbed as a result of the cumulative development. There may be a low magnitude, localised disturbance of pine marten utilising the coniferous woodland plantation during construction, but this is considered to be not significant given the low pine marten activity and the low magnitude of the impact.

Temporary Diversion of OHL during Construction of Proposed Creag Dhubh Substation

- 8.7.22 The northern end of the Proposed Development connects into the proposed Creag Dhubh substation. During its construction there will be a need to install sections (approximately 800 m) of OHL to allow continued transmission of energy while the substation is connected to the OHL. These sections of OHL would be required within coniferous plantation around the proposed substation. Potential significant impacts on habitat (woodland loss) would be possible as a result of felling for this diversion, however as this woodland type is of low biodiversity value, no significant impacts are predicted.

Proposed ITE/ITW tie-in with temporary diversion at Creag Dhubh

- 8.7.23 This cumulative development forms associated works for the proposed Creag Dhubh to Dalmally 275 kV OHL connection that connects Creag Dhubh substation to the existing 132 kV Taynult to Inveraray OHL. Potential in-combination impacts are anticipated to be similar in nature (but smaller in scale) to the potential impacts identified for the Proposed Development. However, it is noted that the potential in-combination impacts would be minor and not significant given the scale and nature of the works relating to the tie in would be localised and on a much smaller scale when compared to the Proposed Development. Furthermore, potential in-combination effects would be managed by the Applicant in accordance with the project CEMPs, with mitigation measures developed in tandem to mitigate significant cumulative effects.

Other Developments

Creagan and Cabrach Long Term Forest Plan

- 8.7.24 Stands of woodland located to the north-west of the Proposed Development. Long Term Forest Plans (LTFPs⁵⁷) are 20 year strategic management plans that set in place management objectives to enable sustainable forest management. Woodlands included within a LTFP are likely to obtain forest certification, gain access to Forestry Grant Schemes and are provided with 10 year approval for felling, thinning and restocking. Loss of woodland as a result of the Proposed Development could impact Forest Plans and overall woodland connectivity in the region. However, it is noted that the potential in-combination impacts (i.e., woodland removal and vegetation management) would be minor and not significant given the distance between these woodlands and the Proposed Development.

River Array Hydro Connection

- 8.7.25 Insufficient information was available on any significant environmental effects. As a result, an assessment of the cumulative effects could not be undertaken.

⁵⁷ Forestry Commission Scotland, 2016. Long Term Forest Plans -Applicants Guide. Available at : [132 \(forestry.gov.scot\)](https://www.forestry.gov.scot)

Summary of Cumulative Effects

- 8.7.26 The main cumulative effects are considered to be a small loss of Ancient Woodland, BRP trees, peatlands (blanket bog), GWDTEs and disturbance of protected species, such as badger, otter and pine marten. Implementing mitigation, including the provision of bat boxes and peatland restoration could result in an overall beneficial cumulative effect on habitats by improving the availability of bat roosts and the quality of peatland in the Ecology Field Survey Area. Standard pollution prevention measures, habitat reinstatement and maintenance of hydrological connectivity would minimise impacts on GWDTEs. As a result, the overall effect of the cumulative loss of BRP trees, peatland, and GWDTEs is considered to be not significant.
- 8.7.27 A combined disturbance of protected species could occur due to the overlapping timeframes of many of the cumulative developments, resulting in a combined displacement of commuting and foraging species that have larger ranges, such as bats, otter and pine marten. Construction activities would likely have a localised, short-term, low magnitude disturbance effect on these species. As a result, the effect is considered to be not significant.
- 8.7.28 Taking into account the likely low cumulative effects of the surrounding cumulative developments with the Proposed Development, no significant cumulative effects are considered to occur on BRP trees, peatlands, GWDTEs, and protected species. However, as Ancient Woodland is an irreplaceable resource, a **significant cumulative effect** is considered to occur between the surrounding cumulative developments with the Proposed Development.

8.8 Summary

- 8.8.1 A programme of desk studies and field surveys were undertaken in March 2022 to determine the baseline of the site. Surveys were undertaken following best practice guidance and the assessment was undertaken following CIEEM guidelines. Surveys were undertaken by Ramboll ecologists. Key ecological constraints include Ancient Woodland, peatlands and protected species. Habitat surveys recorded notable habitats within the Ecology Field Survey Area including broadleaved woodland, wet dwarf shrub heath and blanket bog. Areas of high and moderately GWDTEs were record across the Ecology Field Survey Area, associated with areas of wet dwarf heath and blanket bog. Field signs of pine marten were also recorded (scats). Overall, significant residual effects are predicted on Ancient Woodland.

Table 8-14: Summary of Potential Significant Effects of the Proposed Development

Likely Significant Effect	Mitigation Proposed	Means of Implementation	Outcome/Residual Effect
Construction			
Loss of Ancient Woodland	The permanent loss of Ancient Woodland would be minimised, where possible through a phased felling approach and by spanning trees if possible. Micrositing of access tracks and micrositing of towers within the would also be undertaken, where possible, to avoid felling. Compensatory planting following tree felling	Fell a minimum width for construction with selective felling during operation and maintenance. Micrositing of access tracks and micrositing of towers. Compensatory planting detailed in Chapter 14: Forestry (EIAR Volume 2) . Recommendations for woodland enhancement and creation are also provided in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4) .	Significant adverse residual effect

Likely Significant Effect	Mitigation Proposed	Means of Implementation	Outcome/Residual Effect
Loss of peatland habitat (wet heath)	Active restoration of peatland habitats affected by construction	<p>In order to account for the loss and degradation of wet heath and blanket bog, an area of peatland would be restored in areas of modified bog that no longer contain a significant proportion of peat-forming vegetation. Such areas exist elsewhere within the ecology field survey area and wider land ownerships crossed by the Proposed Development.</p> <p>There is also a commitment to habitat enhancement, as detailed in Technical Appendix 8.2: Outline Habitat Management Plan (EIAR Volume 4).</p>	Not significant
Pollution effect on otter	<p>Pollution control measures would be in place to protect watercourses and control the flow of any run-off from construction or operational activities.</p> <p>Preconstruction protected species surveys will be undertaken and works overseen by an ECoW.</p>	<p>Pollution control measures included in the Outline CEMP (Technical Appendix 2.2: Outline Construction and Environmental Management Plan (EIAR Volume 4)) and the relevant SSEN Transmission GEMPs (Technical Appendix 2.3, EIAR Volume 4).</p> <p>The OCEMP would be updated following the determination of the application for s37 consent and would include an outline of the proposed approach to construction methods and environmental protection during all aspects of the construction phase.</p> <p>SSEN Transmission SPPs would form part of this CEMP.</p> <p>Pre-construction surveys will be undertaken for otter. A suitably qualified and experienced ECoW would be employed to input into the CEMP and oversee the implementation of surface water management and ecological mitigation measures during construction.</p>	Not significant