Chapter 6: Ecology

Contents

6 Ecology

6.1 Executive Summary

Introduction

6.1.1 This chapter assesses the likely significant effects of the Proposed Development on Ecology. It constitutes an Ecological Impact Assessment (EcIA) and has been informed by both desk and field surveys, each implemented in compliance with best practice methods. The chapter identifies the Ecological Importance of the Proposed Development Site, and a range of wider Study Areas, and identifies potentially significant effects. Where significant effects are predicted, additional mitigation is established and the significance of effects re-assessed.

6.1.2 The chapter also identifies how wider enhancement for biodiversity may be achieved through the delivery of the Proposed Development.

Overview of Baseline Conditions

6.1.3 Desk studies undertaken to inform the chapter identified several Ancient Woodland Inventory (AWI) sites within the Site Boundary, along the existing access tracks at the Balagowan Site entrance. The AWI stands are comprised of a mosaic of Ancient Woodland (of Semi-Natural Origin) and 'Other' Ancient Woodland (on Roy Maps). In addition to the AWIs, the Holy Loch Local Nature Reserve (LNR) and Local Nature Conservation Site (LNCS) is located 1.3 km to the north-east. While the Holy Loch is located some distance from the Proposed Development, it is hydrologically connected to the Site via the Little Eachaig River and its unnamed tributaries. While other statutory and non-statutory designated sites were identified within the Study Area, none were considered to have structural or functional connectivity to the Site.

6.1.4 Field surveys completed within the Ecological Survey Area (ESA) identified habitats and vegetation communities typically associated with upland landscapes in west Scotland, including those associated with peatland and considered to be of ecological value. However, historic and current land uses within the Site have affected the structure and function of these habitats and vegetation communities.

6.1.5 Field surveys also identified that the ESA had limited potential to support protected and notable species. However, no evidence of protected species was recorded, beyond incidental sightings of amphibians and reptiles. Bat surveys identified relatively low activity across the Bat Survey Area (BSA).

Overview of Effects

6.1.6 Informed by the baseline conditions and Scoping Report, the following potential effects were considered:

- Construction effects on designated sites which are structurally or functionally connected to the Site;
- Construction effects on habitats and vegetation of conservation interest[1];
- Construction effects on protected species recorded within the Site; and
- Operational effects on bats.

6.1.7 However, this chapter explains that, owing to the generally limited Ecological Importance of the Site for these features and limited magnitude of impact, combined with detailed mitigation and enhancement measures implemented to protect these features, no significant effects within EIA terms are predicted.

Summary of Significant Residual Effects and Mitigation Proposed

6.1.8 No significant residual effects on ecological features are predicted. While no further mitigation is required, measures to ensure legal compliance, as it relates to protected species and protection of the water environment, will be captured in a Construction Environmental Management Plan (CEMP). An Outline CEMP (OCEMP) is included within Appendix 3.1 of the EIA Report.

6.2 Introduction

6.2.1 This chapter assesses the likely significant effects of the proposed Giant's Burn Wind Farm ('the Proposed Development') on Ecology. It constitutes an Ecological Impact Assessment (EcIA) and is based on the Proposed Development detail presented in Chapter 3. This chapter sets out the following:

[1] Defined as Annex 1 habitats, Scottish Biodiversity List (SBL) habitats, habitats included in the Argyll and Bute Council Local Biodiversity Action Plan (LBAP), and habitats considered to indicate potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs).

- A description and interpretation of the ecology baseline conditions (including desk-based and field surveys);
- The assessment methodology and significance criteria used in assessing effects on ecological features, as well as any embedded design mitigation and good practice measures considered;
- An assessment of the potential effects on ecological features during the construction and operational phases of the Proposed Development;
- Mitigation measures proposed to address potentially significant effects, where necessary;
- Cumulative effects with other developments, which are currently in planning, consented or in construction within 5 km, are also assessed; and
- An assessment of residual likely significant effects, remaining following the implementation of mitigation, where necessary.

6.2.2 The Chapter is supported by Figures 6.1 – 6.8 which are referenced throughout the text and provided in EIAR Volume 3a. The following appendices are also referred to throughout the chapter and can be found in EIAR Volume 4.

- Appendix 6.1: Desk Study and Legal/Policy Context;
- Appendix 6.2: Habitats and Vegetation Survey Report;
- Appendix 6.3: Protected Species Survey Report;
- Appendix 6.4: Bat Survey Report; and
- Appendix 6.5: Biodiversity Enhancement Strategy (BES).

6.2.3 This EcIA was prepared and overseen by professional and experienced ecological consultants with appropriate memberships of the Chartered Institute of Ecology and Environmental Management (CIEEM), and experience of EcIA for wind farms.

6.2.4 Field surveys and data collection were undertaken by ecologists who had extensive experience and/or training in undertaking baseline ecological surveys for renewable energy projects (particularly wind farms), and in the assessment of ecological impacts in the Environmental Impact Assessment (EIA) context. Further details are provided in Chapter 1, Table 1.1.

6.2.5 The following terminology will be referred to throughout this chapter:

- Site:
  - All land within the Site Boundary, as shown in Figure 3.1.
- Proposed Development:
  - The physical process involved in the development of land at Giant's Burn Wind Farm including construction, operation and decommissioning[2] of a seven turbine wind farm, Battery Energy Storage System (BESS) and ancillary infrastructure (described in detail in Chapter 3).
- Study Area:
  - All land within which the Desk Study was undertaken (within 2 km, 5 km and 10 km of the Site, as shown in Figure 6.2).
- Ecology Survey Area (ESA):
  - The area within the Site Boundary in which all ecology surveys were undertaken in line with good practice guidelines for all ecological features surveyed (as shown in Figure 6.1 and detailed in Table 6.2 below).
- Bat Survey Area (BSA):
  - The area within which bat surveys were undertaken in line with good practice guidelines. The Bat Survey Area (BSA) is defined as a 200 m buffer plus rotor radius (81 m) of proposed turbine locations (as shown in Figure 6.7).

[2] An assessment of effects during the decommissioning phase has not been undertaken in the EIA as the baseline against which to assess likely significant decommissioning effects is not known. However, a method statement will be prepared and agreed with the relevant statutory consultees prior to decommissioning of the Proposed Development, and it is anticipated that any effects associated with decommissioning will be similar to or less than those associated with construction.

6.3 Legislation, Policy and Guidelines

6.3.1 This section provides details of relevant legislation, policy and guidance that have been taken into consideration to inform the EcIA.

Legislation and Assessment Guidance

6.3.2 Relevant legislation and guidance documents have been reviewed as part of this EcIA. Of particular relevance are:

- The Conservation of Habitats and Species Regulations 2017 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Protection of Badgers Scotland Act 1992 (as amended);
- The Water Environment and Water Services (Scotland) Act 2003;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011; and
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

6.3.3 References to all legislation relate to legislation as amended and in force at the time of writing this chapter; further information is provided within Technical Appendix 6.1.

Planning Policy

6.3.4 The following relevant policy has informed the EcIA:

- National Planning Framework 4 (NPF4);
- The Scottish Biodiversity List;
- Argyll and Bute Local Development Plan 2 (2024);
- Argyll and Bute Council's Biodiversity Duty Action Plan (2016-2021); and
- Argyll and Bute Local Biodiversity Action Plan (2010-2015).

Guidance

6.3.5 Cognisance has been taken of the following best practice guidelines/guidance in relation to terrestrial ecology:

- CIEEM (2021). Good Practice Guidelines for Habitats and Species, Version 3.
- CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater and Coastal
- NatureScot (2023). Advising on Peatland, Carbon-Rich Soils and Priority Peatland Habitats in Development Management.
- SEPA (2024). Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems.
- Scottish Renewables et al. (2019). Good Practice During Windfarm Construction, 4th Edition.

6.3.6 Further guidance in relation to survey methods and the interpretation of ecological data is referenced in the relevant technical appendices, where appropriate.

6.4 Consultation

6.4.1 In undertaking the EcIA, consideration has been given to the EIA scoping responses and other consultation, which has been undertaken as detailed in Table 6.1.

Table 6.1 – Consultation Responses

Consultee and Date	Consultation Response	Applicant Response
Statutory Consultees		
NatureScot (NS) Formal Scoping Response 29th March 2024	Requested that NVC surveys were undertaken across the entire Site due to the potential for priority peatland to be affected, and recommend that survey results were used to inform the design and layout process, so that the development avoids, where possible, sensitive habitats such as blanket bog and montane heath.	Information regarding habitat and vegetation surveys, including detailed NVC habitat descriptions, are located within this chapter and Appendix 6.2. The results of these surveys were used to inform the design and layout process, which is described within Chapter 2.

Consultee and Date	Consultation Response	Applicant Response
	Requested that impacts should be minimised and suitable mitigation, restoration and/or compensation measures be proposed in line with NPF4 Policy 3. Assessments should consider the extent of habitat loss and damage, both direct and indirect, temporary and permanent, and suitable mitigation and/or restoration measures should be presented in an outline Habitat Management Plan (oHMP) and a Peat Management Plan (PMP). Where impacts cannot be avoided, NS recommend that restoration to achieve offsetting (i.e. compensation rather than biodiversity enhancement) should be in the order of 1:10 (lost:restored), i.e. 1ha loss of peatland should result in measures to restore 10ha of peatland.	Mitigation, restoration and compensation measures are described within this chapter and within the Biodiversity Enhancement Strategy (BES) which is located within Appendix 6.5. An outline PMP is located within Appendix 8.1. The BES includes measures to deliver compensation for the loss of priority peatland habitats.
	NS mention their '*Advising on Peatland, Carbon-Rich Soils and Priority Peatland Habitats in Development Management*' guidance, which is to be used to inform the design of the Proposed Development. This guidance includes advice on surveys, assessment, mitigation, and enhancement, including peatland restoration techniques, Habitat Management Plans and the level of information recommended to be included with a future application.	The guidance note on Priority Peatland Habitats has been considered in relation to the impact that the Proposed Development will have on priority peatlands. The entire Site has been subject to NVC survey, and this included identification of priority peatland habitats. The guidance is also utilised in the design of proposed mitigation and enhancement, with details included within this chapter, Chapter 8 and Appendix 6.5.
Argyll and Bute Council Formal Scoping Response 4th April 2024	At time of writing, advice from the Council's Local Biodiversity Officer (LBO) has not been obtained. It is therefore not possible to provide comment on the scope of these assessments.	N/A
Scottish Environmental Protection Agency (SEPA) Formal Scoping Response 12th March 2024	The EIA submission must contain a scaled plan of sensitivities; for example, peat, Groundwater Dependent Terrestrial Ecosystems (GWDTE), proximity to watercourses etc., overlain with the Proposed Development.	An assessment of potential effects on GWDTEs, peatland and watercourses is provided in Chapter 8. Assessments have been informed by habitat and vegetation data set out in Appendix 6.2. Potential GWDTE habitats and confirmed GWDTEs are illustrated in Figure 6.5 and Figure 8.1, while priority peatland habitats can be viewed in Figure 6.3a-b, Figures 6.4a-f and Figure 8.1. Watercourses and their buffers are illustrated in Figure 8.1.
	SEPA require a peat condition assessment and peat depth survey for the Site and would object to any proposed infrastructure on/near natural peatland/high conservation value habitats and look for identification of areas with restoration potential.	An assessment of peatland condition, and the results of peat depth surveys, can be found within Chapter 8. Assessments have been informed by habitat and vegetation data set out in Appendix 6.2. The results of these surveys were used to inform the design and layout process, which can be viewed within Chapter 2. Areas with restoration potential are described within Appendix 6.5 and illustrated in Figure 6.8.
	Undertake National Vegetation Classification (NVC) surveys and provide habitat mapping.	Information regarding habitat and vegetation surveys, including detailed NVC habitat descriptions, are located within this chapter and Appendix 6.2.
	Requested the production of an oHMP. The oHMP should include:	A BES is located within Appendix 6.5.

Consultee and Date	Consultation Response	Applicant Response
	– Proposals for reuse of disturbed peat in habitat restoration, if relevant; – Details of restoration to compensate for the area of peatland habitat directly and indirectly impacted by the development; – Outline proposals for peatland enhancement in other areas of the Site; and – Monitoring proposals.	
Non-Statutory Consultees		
Royal Society for the Protection of Birds (RSPB) Scotland Formal Scoping Response 14th March 2024	RSPB Scotland recommends that an oHMP is provided for stakeholder consideration at application. In particular, they wish to see detail of how it is proposed to mitigate the loss of open ground habitats within the red-line boundary, and what biodiversity enhancement activities are proposed in addition to this mitigation. oHMP priorities/objectives should be agreed pre-consent and approved with key stakeholders based on the interests in the area. A Habitat Management Group should also be established to monitor and report on HMP actions/outcomes, secured by planning condition. RSPB Scotland notes that commercially afforested land immediately north, north-east and along the north-west edge of the red line boundary have very high/high opportunity for rainforest restoration under Plantlife Scotland's Rainforest Opportunity Model.	A BES is located within Appendix 6.5 which outlines mitigation, enhancement and restoration proposals. Consideration has been given to ornithological features and the loss of open ground in Chapter 7, and measures in the BES have been designed with consideration of golden eagle. It is intended that the outline proposals are used as a basis for a detailed Biodiversity Enhancement Plan (BEP), which is to be agreed with Argyll and Bute Council under a condition attached to any consent granted to the Proposed Development in consultation with NatureScot, Scottish Environmental Protection Agency (SEPA), and other relevant stakeholders. Opportunities for Atlantic temperate rainforest have been considered when designing mitigation, enhancement and restoration proposals in the BES. Access has been requested to the Plantlife Scotland Rainforest Opportunity Model and, if made available, this will be used in developing the detailed proposals of the BEP post-consent.
River Eachaig Fishery Syndicate, Fisheries Management Scotland and Argyll Fisheries Trust Formal Scoping Response 13th March 2024	The proposed layout suggests a low level of threat to the Scoops Burn tributary of the Glenkin Burn and Allt na Chriche tributary. It is possible that brown trout and European eel are present within the Site in these burns, and sea trout in the lower Glenkin Burn / Little Eachaig. We therefore suggest that pre (baseline), during and post construction data is collected as per Marine Directorate's guidelines to demonstrate that the fishery has been protected.	Design and good practice mitigation measures will be included as standard to protect the aquatic environment, including the maintenance of stream habitats and water quality. Pre-construction baseline data will be collected and data will be monitored throughout the duration of the construction and post-construction phases of the Proposed Development. Good practice mitigation will include appointment of an ECoW to oversee relevant protection measures and monitoring programmes. It is therefore considered that there are no likely significant effects.

Consultee and Date	Consultation Response	Applicant Response
Kilmun Community Council Formal Scoping Response 2nd July 2024	The Kilmun Community Council commented that red squirrels and pine martins are located within the area.	No pine marten or red squirrel evidence was recorded during the protected species surveys. However, details relating to habitat suitability for both species can be found within Appendix 6.3.
	The community council also commented that cetaceans (dolphins, porpoises, and seals (resident)) and visiting whales which are in the Clyde Estuary at present, are very susceptible to noise from a windfarm.	No records of cetaceans or whales were returned by the 2 km Desk Study, contained within Appendix 6.1. Noise assessments are contained within Chapter 11. However, noise of an onshore windfarm at an altitude over 250 m is not considered to have a likely impact pathway to marine mammals.

6.5 Assessment Methodology and Significance Criteria

6.5.1 The following sections establish the method adopted in assessing the significance of potential effects on ecological features.

Study Area

6.5.2 The Study Areas applied in this assessment vary by ecological feature, and are described in Table 6.2.

Table 6.2 – Study Areas

Desk Studies	
Ecological Feature	*Study Area*
Statutory Designated Sites	The Proposed Development and a 10 km buffer.
Non-Statutory Designated Sites	The Proposed Development and a 5 km buffer.
Existing Protected Species Data	The Proposed Development and a 2 km buffer (10 km for bats).
Field Survey	
Ecological Feature	*Study Area*
Habitat and Vegetation Surveys (including GWDTEs)	The Ecology Survey Area (ESA) for habitats extends to the Site Boundary. Owing to the design of the Proposed Development, this allows a 250 m buffer around proposed infrastructure to be considered for potential GWDTEs.
Protected Species Surveys	The ESA for protected species extends to the Site Boundary. Owing to the design of the Proposed Development, this allows a buffer of up to 250 m around proposed infrastructure to be considered for potential protected species resting sites, as required by species-specific survey methods.
Bats	The Bat Survey Area (BSA) comprises the Proposed Development. A technical definition of the buffers applied during bat surveys is provided in Appendix 6.4.

6.5.3 ESAs and Desk Study Areas are shown in Figures 6.1 and 6.2 respectively.

Desk Study

6.5.4 A desk study was undertaken to identify known ecological features within the relevant Study Areas described in Table 6.2. Searches were made for statutory and non-statutory designated sites and extant populations of species identified for assessment through Scoping. Resources referenced include:

- NatureScot SiteLink Website;
- Multi-Agency Geographic Information for the Countryside;
- Scotland Environment Mapping Service, including Ancient Woodland Inventory;
- Argyll and Bute Local Development Plan 2 (2024);
- Argyll and Bute Council's Biodiversity Duty Action Plan (2016-2021);
- Argyll and Bute Local Biodiversity Action Plan (2010-2015);
- The Carbon and Peatland Map; and
- National Biodiversity Network (NBN) Atlas Scotland (records under CC-BY licence).

6.5.5 Where appropriate, other scientific resources were referred to when determining protected species behaviour or population sizes. These resources are referenced in the chapter where appropriate.

6.5.6 A detailed account of the desk study methods and findings is provided in Appendix 6.1.

Field Surveys

6.5.7 The following field surveys were undertaken in April to October 2024 and April 2025, to inform the assessment:

- Phase 1 Habitat Survey;
- National Vegetation Classification (NVC) survey of habitats of conservation interest[1];
- Protected species surveys, including searches for suitable habitat for, and direct evidence of:
  - otter;
  - water vole;
  - pine marten;
  - red squirrel; and
  - badger.
- Bat surveys (following specific methods for onshore wind farm proposals).

6.5.8 A detailed account of habitat and vegetation survey methods and findings is presented in Appendix 6.2. Protected species survey methods and findings are presented in Appendix 6.3, while bat survey methods and findings are presented in Appendix 6.4.

Approach to GWDTEs

6.5.9 The term 'Groundwater Dependent Terrestrial Ecosystem' (GWDTE) refers to wetland habitats that rely on groundwater for their function and viability. The concept evolved from the Water Framework Directive, transposed in Scotland through the Water Environment and Water Services Act (2003) (WEWS), and subsequent SEPA guidance.

6.5.10 SEPA guidance sets out those vegetation communities that potentially rely upon groundwater. Classification as a GWDTE does not convey any ecological value on a habitat; indeed, many GWDTE habitats are common and widespread across Scotland (e.g. rush mire). However, although GWDTE habitats are not necessarily of specific ecological value, WEWS and consequent guidance require GWDTEs to be protected wherever possible.

6.5.11 SEPA guidance requires potential effects on GWDTEs to be fully assessed and where necessary, mitigated. It is important to understand this context because to focus the assessment solely on the ecological value of GWDTEs is not appropriate. The assessment of potential effects should focus on GWDTEs as a proxy for groundwater movement, i.e. the assessment should focus on the effect of the Proposed Development upon the quality and quantity of groundwater supporting the GWDTE. Notwithstanding this, the ecological value of GWDTEs in their own right must also be considered.

6.5.12 A short account of the identification methodology for potential GWDTEs is presented in Appendix 6.2. Detailed assessment of GWDTEs and potential effects on them is provided in Chapter 8 and its appendices.

Approach to Priority Peatland Guidance

6.5.13 NatureScot guidance defines peatlands as areas of land containing peat which support a variety of habitats. The value of these habitats can vary considerably, depending on the depth of peat and vegetation communities they support. Within the guidance, priority peatland habitats are categorised by NVC communities, which in turn reflects their conservation value. Those NVC communities which are recommended to be avoided, or considered to potentially raise issues of national interest, are defined in the guidance.

6.5.14 When evaluating the impact of the Proposed Development on priority peatland, NVC communities which are recommended to be avoided, or which potentially raise issues of national interest have been considered. NVC communities which are considered unlikely to raise issues of national interest have also been subject to evaluation.

6.6 Assessment Methodology and Significance Criteria

Identifying Ecological Value

6.6.1 The assessment undertaken in this chapter is based on good practice methods, as described in CIEEM's 'Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine'.

6.6.2 The guidelines recommend that the 'Ecological Importance' of a given site or Study Area in relation to each of its ecological features is determined within a defined geographical context. The geographical context as it relates to the Proposed Development, is described in Table 6.3.

Table 6.3 – Ecological Importance Classification

Ecological Importance Classification	Qualifying Criteria	Relevant Geographical Context
International	A Study Area is considered of International ecological importance when it supports: – An internationally designated site or candidate site (Special Protection Areas (SPA), potential SPA, Special Areas of Conservation (SAC), candidate SAC, possible SAC, Ramsar sites, proposed Ramsar sites or Biogenetic Reserve) or an area which NatureScot has determined meets the published selection criteria for such designations, irrespective of whether it has been notified. – A viable area of habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitat which are essential to maintaining the viability of that ecological resource at an international scale. – >1% of the European resource of an internationally important species, i.e. listed in Annex 1, 2 or 4 of the Habitats Directive.	Europe
UK/National	A Study Area is considered of UK/National ecological importance when it supports: – A nationally designated site (Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Marine Nature Reserve) or a discrete area which NatureScot has determined meets the published selection criteria for national designation irrespective of whether it has yet been notified. – A viable area of a priority habitat referenced in the UK Post-2010 Biodiversity Framework or Scottish Biodiversity List (SBL) or Priority Peatland habitat, or smaller areas of such habitat which are essential to maintaining the viability of that ecological resource at a national scale. – >1% of the National resource of a regularly occurring population of a nationally important species i.e. a priority species listed in the SBL and/or Schedules 1, 5 (Section 9 (1, 4a, 4b)) or 8 of the Wildlife and Countryside Act 1981.	UK/Scotland
Regional	A Study Area is considered of Regional ecological importance when it supports: – Non-statutory designated sites that represent a scale, or habitat/species assemblage, of value across a number of counties which are recognised in a regional context. – Non-designated sites that the designating authority has determined meet the published ecological selection criteria for designation. – Viable and extensive areas of legally protected habitat/habitat identified in Regional Biodiversity Action Plan (BAP) or County BAP, or smaller areas of such habitats that are essential to maintaining the viability of the resource at a regional scale. – Any regularly occurring populations of an internationally/nationally important species or a species in a relevant policy which is important for the maintenance of the regional meta-population. – Semi-natural ancient woodland greater than 0.25 hectares (ha).	West Scotland
County	A Study Area is considered of County ecological importance when it supports: – County sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, e.g. Local Nature Conservation Sites (LNCS). – Viable areas of legally protected habitat/habitat identified in County BAP or smaller areas of such habitats that are essential to maintaining the viability of the resource at a county scale. – Any regularly occurring population of an internationally/nationally important species in a relevant UK/Council BAP which is important for the maintenance of the county meta-population. – Semi-natural ancient woodland smaller than 0.25ha. – Networks of species-rich hedgerows.	Argyll and Bute
Local	A Study Area is considered of Local ecological importance when it supports: – Commonplace and widespread semi-natural habitats, e.g. scrub, poor semi-improved grassland, coniferous plantation woodland, intensive arable farmland, etc. which despite their ubiquity, contribute to the ecological function of the local area (habitat networks etc.). – Isolated, small or species poor stands of habitat of conservation interest which contribute to the viability of the resource at a local level. – Very small, but viable, populations of internationally/nationally important species or a species in a relevant UK/Council BAP which is important for the maintenance of the local meta-population.	Study Area and 5 km Buffer

Ecological Importance Classification	Qualifying Criteria	Relevant Geographical Context
	– Networks of linear features, including species-poor hedgerows.	
Study Area or Site[3]	A Study Area is considered of Study Area ecological importance when it supports: – Habitats of limited ecological value, e.g. improved grassland, but which contribute to the overall function of the application site's ecological functions. – Isolated or species-poor stands of habitats of conservation interest which do not contribute to the viability of the resource at a local level but create diversity within the Study Area. – Very small, but viable, populations of internationally/nationally important species or a species in a relevant UK/Council BAP which do not contribute to the viability of the resource at a local level, but which contribute to diversity within the Study Area.	Study Area

Identify Impacts

6.6.3 Following the assessment of Ecological Importance, likely significant impacts are identified. This process involves the study of the proposed infrastructure layout, construction methods, proposed timescales and operational requirements, with a view to identifying the pathways by which ecological features may be affected. Potential effects can be grouped into the following broad types:

- Direct habitat loss (including both permanent and temporary loss or damage of habitat);
- Habitat fragmentation (disruption of ecological processes through fragmentation, isolation and barriers to movement);
- Mortality (loss of life to habitats, species or qualifying features through direct contact or following pollution events, etc.); and
- Disturbance (disruption to ecological processes through increased human presence, noise, vibration, etc.).

Determination of Significance

6.6.4 To determine significance, effects are considered with reference to the following parameters:

- Beneficial or adverse;
- Extent – the spatial or geographical area over which the effect may occur;
- Magnitude – the size, amount, intensity or volume of the effect (e.g. the percent of an ecological feature affected);
- Duration – the timeframe over which an effect may occur in relation to the ecological characteristic of the relevant feature;
- Frequency – the number of times that an effect may occur; and
- Reversibility – an indication of whether recovery from an effect is possible within a reasonable timeframe.

6.6.5 A degree of confidence, based on professional judgement, is used to assess the likelihood of an effect occurring. The following scale is referred to:

- Certain/Near-Certain: Probability estimated at ≥95%;
- Probably: Probability estimated at 50-95%;
- Unlikely: Probability estimated at 5-≤50%; and
- Extremely Unlikely; Probability estimated at ≤5%.

6.6.6 Based on the combination of the parameters listed above, an effect is then considered to be either significant or not significant in the context of the EIA Regulations. An effect is considered to be significant if it has the potential to affect the integrity of a designated site or habitat, or the conservation status of a species. Technical definitions of integrity and conservation status follow best practice.

6.6.7 The significance of a potential effect is considered, using professional judgement, within the context of the geographically based ecological importance of the feature. For example, the significance of a potential effect on a habitat of 'Local' Ecological Importance is considered to be significant, or not significant, at a 'Local' level. In some cases, where only a small part of an ecological feature is

[3] For the purposes of this assessment, the Study Area is the relevant Study Area (ESA or BSA).

affected, the potential effect may be significant at a lower geographical level; for example, an effect deemed to be significant on a feature of 'Local' ecological importance may be only considered significant at the 'Site' level.

6.6.8 The EIA assessment process generally requires that the significance of an effect be described as either 'major, 'moderate,' 'minor' or 'negligible'. However, best practice guidance in relation to EcIA does not support this approach, due to the complexities of ecological processes.

6.6.9 To allow the potential effects identified in this EcIA to be considered alongside those addressed in other topic chapters, a 'translation' from EcIA significance to EIA significance is undertaken, as described in Table 6.4. The translation relates the geographically based significance of ecological effects (identified through the EcIA process) to the standard terminology for significance presented in other chapters (following the EIA process), allowing direct comparison.

6.6.10 'Major' and 'Moderate' effects are considered 'significant' in the context of the EIA Regulations. Where a Study Area is considered to be of below 'County' ecological value for a given receptor, it is not possible for that receptor to experience significant effects within the EIA context.

Table 6.4 – Ecological Effect 'Significance' Translation to EIA Terminology

EIA Significance Terminology	Corresponding EcIA Effect Significance Terminology
Major	***International/National***
	UK/National
Moderate	***Regional***
	County
Minor	Local
	Site/Study Area
Negligible	Not Significant

Identifying Mitigation and Assessing Residual Significance

6.6.11 Where likely significant effects, in EIA terms, are identified, mitigation measures are proposed to alleviate their significance as far as is practicable. The standard mitigation hierarchy applies, whereby the following sequential measures are considered:

- Avoidance: The effect is avoided by removing its pathway, e.g. by changing the route of an access track. This is most often achieved during the iterative design process.
- Mitigation: Measures are taken to reduce the significance of the effect, e.g. scheduling works outwith the hours of darkness to reduce effects on crepuscular species such as otter and badger.
- Compensation: Where the effect cannot be avoided or reduced, alternative action is taken elsewhere within the Site/Proposed Development boundary, e.g., bringing retained habitat into better condition.

6.6.12 Using the assessment method described above, significant effects are re-assessed on the basis that mitigation measures will be applied, and a residual significance identified. An important part of this step is the identification of the likely success, or confidence in, the proposed mitigation measure.

Identifying Opportunities for Enhancement

6.6.13 Once mitigation has been identified and the residual significance assessments have been completed, consideration is given to potential enhancement measures to benefit biodiversity within the Site. A Biodiversity Enhancement Strategy (BES) is located within Appendix 6.5. The BES details how it addresses the requirements of planning policy and guidance, specifically NPF4 Policy 3, and NatureScot's revised guidance on priority peatland habitats. Consideration of the proposals set out in the BES, in terms of potential beneficial effects, are included in this chapter.

6.7 Limitations of the Assessment

6.7.1 All ecological surveys represent a snapshot of the faunal and floral assemblages of any given site. While surveys provide an overview of the habitats and species present, they cannot be used to determine long-term trends in species and habitat populations or behaviours. Methods adopted during the surveys at the Site represent current good practice, but the data collected cannot be used to confirm the absence of a species from the ESA. Faunal and floral assemblages are dynamic and can change over short periods of time. To that end, the suitability of the ESA to support protected and notable species is considered, in addition to direct searches for evidence.

6.7.2 Survey-specific limitations are presented in Appendices 6.1 – 6.4.

6.8 Baseline Conditions

6.8.1 A series of desk studies and field surveys were undertaken by LUC between April 2024 and April 2025 to establish the ecological baseline of the Study Area. A summary of these is provided within this section and further details are provided within Appendices 6.1 to 6.4.

Statutory and Non-Statutory Designated Sites

6.8.2 Several AWI sites are located within the Site Boundary. Within the north of the Site, at the Balagowan Site entrance, four stands of Ancient Woodland (of Semi-Natural Origin) are present along the existing access track. These are comprised of Dalinlogart Wood and three unnamed woodlands. Two stands of 'Other' Ancient Woodland (present on the Roy Map) are also adjacent to Dalinlogart Wood. Another stand of Ancient Woodland (of Semi-Natural Origin), known as Dunloskin Wood, is present to the east of the Site, and is located adjacent to an existing access track. A final stand of Ancient Woodland (of Semi-Natural Origin) is located at the north-western Site Boundary.

6.8.3 Holy Loch Local Nature Reserve (LNR) and Local Nature Conservation Site (LNCS) is located 1.3 km to the north-east of the Site. Despite the distance between the designated site and the Site Boundary, the LNR and LNCS are connected to the Site hydrologically, via the Little Eachaig River.

6.8.4 Appendix 6.1 provides wider context on other statutory and non-statutory designated sites within the Study Area. Owing to an absence of structural or functional connectivity to the Site, these designated areas are scoped out of the assessment.

Habitats and Vegetation

6.8.5 Appendix 6.2 sets out a detailed account of the habitat and vegetation baseline within the ESA.

6.8.6 The ESA's undulating topography and variable climatic conditions give rise to a complex habitat assemblage, containing a variety of vegetation communities and habitats. Peat deposits were noted to be widespread across the open areas of the ESA, creating typical habitat assemblages of rainwater-fed bog and dry heath. Small areas of broadleaved woodland, acid grassland and bracken were also recorded on freer-draining sloping ground, particularly within the north-west of the ESA. Despite the presence of habitats of conservation interest[1], the ESA has been impacted heavily by management. Evidence of high levels of grazing pressure were recorded throughout the ESA.

6.8.7 Thirteen Phase 1 habitats and 18 NVC communities were recorded within the ESA. Phase 1 habitats and NVC communities are presented in Figures 6.3a-b and 6.4a-f respectively, and summarised in Table 6.5, which also includes an indication of potential groundwater dependency where relevant. Habitats that do not qualify as being of conservation interest[1] are included for completeness.

Table 6.5 – Summary of Habitat and Vegetation Types and their Conservation Interest

Phase 1 Habitat Classification	NVC Community	Area within the ESA (ha)	Proportion of the ESA (%)	Mechanism for Habitat and Conservation Interest Status
A1.1.1 Broadleaved Woodland (Semi-Natural)	W4, W11 and W17	15.57	2.22	– High Potential GWDTE (W4) – Scottish Biodiversity List (W4, Wet Woodland) – Scottish Biodiversity List (W11 and W17, Upland Birchwoods) – Argyll and Bute Local Biodiversity Action Plan (LBAP)
A1.2.2 Coniferous Woodland (Plantation) A4.2 Coniferous Woodland (Recently Felled)	-	206.19	29.43	N/A
A2.1 Scrub (Dense/Continous)	-	2.01	0.29	N/A
B1.2 Acid Grassland (Semi-Improved)	U4, U5 and U6	81.44	11.62	– Moderate Potential GWDTE (U6)
B5 Marshy Grassland	M23 and M25 (on peat <0.5m)	89.25	12.74	– Moderate Potential GWDTE (M23) – Scottish Biodiversity List (M23, Upland Flushes, Fens and Swamps) – LBAP

Phase 1 Habitat Classification	NVC Community	Area within the ESA (ha)	Proportion of the ESA (%)	Mechanism for Habitat and Conservation Interest Status
C1.1 Bracken (Continuous)	U20	25.56	3.65	N/A
D1 Dry Dwarf Shrub Heath	H10 and H12	30.14	4.30	– Annex 1 Habitat (H4030 European Dry Heaths) – Scottish Biodiversity List (Upland Heathland) – LBAP
E1.6.1 Blanket Bog	M1, M2, M3, M17 and M19	235.81	33.66	– Annex 1 Habitat (H7130 Blanket Bog) – Scottish Biodiversity List (Blanket Bog) – Priority Peatland – LBAP
E1.7 Wet Modified Bog	M25 (on peat >0.5m)	2.80	0.40	– Annex 1 Habitat (H7130 Blanket Bog) – Priority Peatland – Scottish Biodiversity List (Blanket Bog) – LBAP
E2.1 Acid Flush	M6	11.87	1.69	– High Potential GWDTE (M6) – Scottish Biodiversity List (Upland Flushes, Fens And Swamps) – LBAP
E2.2 Basic Flush	M10	N/A[4]	N/A	– Annex 1 Habitat (H7230 Alkaline Fens) – High Potential GWDTE (M10) – Scottish Biodiversity List (Upland Flushes, Fens And Swamps) – LBAP
G2 Running Water	N/A	N/A	N/A	– Scottish Biodiversity List (Rivers) – LBAP

6.8.8 In summary, habitats of conservation interest recorded within the ESA included the following:

- Three Annex 1 habitats: H4030 European Dry Heaths, H7130 Blanket Bog and H7230 Alkaline Fens;
- Six Priority Peatland habitats: M1, M2, M3, M17, M19 and M25 (on peat >0.5 m);
- Six Scottish Biodiversity List habitats: Wet Woodland, Upland Birchwoods, Upland Heathland, Blanket Bog, Upland Flushes, Fens and Swamps, and Rivers; and
- Five potential GWDTE communities: M6, M10, M23, U6 and W4.

6.8.9 The most common Annex 1 habitat type was Blanket bog (H7130), comprising approximately 34.06% of the ESA when communities M1, M2, M3, M17, M19 and M25 (on peat >0.5 m) were combined. These habitat types were primarily associated with deeper peat substrates (0.5–9.0 m). H4030 European Dry Heaths were the second most dominant Annex 1 habitat within the ESA, comprising approximately 4.30%. This habitat was commonly associated with deposits of peat ranging from 0.0-1.5 m depth.

6.8.10 The most common priority peatland habitat was M19 blanket bog, accounting for 21.66% of the ESA. M17 communities were also recorded, accounting for a further 11.99% of the ESA. M17 is a community of wetter peat, while M19 occurs on drier substrates. These communities were recorded on peat depths ranging from 0.5-9.0 m. While blanket bog communities were located across the ESA, the

[4] Due to their small size, M10 communities were recorded as Target Notes. Target Notes are located within Annex B in Appendix 6.2.

extent of sphagnum cover was noted to be variable from 'frequent' to 'rare,' indicating a peatland condition closer to 'modified' than to 'near natural.' *Sphagnum capillifolium* and *S. papillosum* were the only sphagnum species recorded within the ESA and were often only found in abundance in the wettest areas to the north-east. There is evidence of management throughout the ESA, in the form of grazing pressure from livestock and deer.

6.8.11 Blanket bog and dry heath were commonly located adjacent to one another; this included areas where blanket bog transitioned to dry heath on increased gradients and/or thinner peat, as well as where blanket bog has been converted to dry heath due to historic management and ongoing agricultural land uses. As the depth of peat reflects the underlying topography, these two habitat types often occur in a mosaic over a short distance.

6.8.12 M25 vegetation accounted for 10.01% of the ESA, however, only 0.40% was recorded on peat >0.5 m deep. M25 is considered to be a priority peatland community that is unlikely to raise issues of national interest as it is almost always a replacement for the original bog vegetation following unfavourable management. Frequent burning and grazing can convert wet heath and blanket bog to M25, especially when these treatments are combined with artificial drainage. If burning is repeated too often and if the vegetation is also grazed, purple moor-grass can easily come to dominate at the expense of the dwarf shrubs.

6.8.13 M25 is associated with the Phase 1 Habitat 'E1.7 Wet Modified Bog' when it occurs on peat >0.5 m in depth. Where it occurs on peat <0.5m depth, it is categorised as 'B5 Marshy Grassland'. Within the ESA, M25 often occurred in a mosaic with M17 and M19 where peat depth was >0.5 m. Areas of M25 recorded along watercourses recorded peat depths between 0-0.5 m and as such these areas of M25 are considered as marshy grassland.

Protected Species

6.8.14 Appendix 6.3 details the protected species surveys undertaken to inform the assessment. With the exception of bats, protected species are scoped out of the assessment as no evidence of target species was recorded.

6.8.15 Appendix 6.4 details the findings of the bat activity surveys undertaken across the Site. In summary, the BSA generally lacked roosting opportunities for bats. There were no structures within the BSA, and woodland areas were almost entirely conifer plantation (including recently felled plantation). However, there were some semi-mature rowan *Sorbus aucuparia* and birch *Betula* woodlands occurring on the north-western slopes of the BSA, which provided more suitable roosting opportunities.

6.8.16 Commuting and navigation opportunities were also limited to smaller watercourses, access tracks and forest rides. Bat activity across the Site was correspondingly low and the Proposed Development is considered to represent a 'low risk' to bats across all measurable parameters.

6.9 Ecological Importance

6.9.1 Table 6.6 provides an interpretation of the Ecological Importance of the relevant Study Areas, for ecological features scoped into the assessment. This assessment is presented as part of the baseline conditions as, as explained in Paragraph 6.6.10, any ecological features for which the Study Area is of less than 'County' value cannot experience significant effects, in EIA terms, and can be scoped out of assessment.

Table 6.6 – Ecological Importance Assessment

Ecological Feature	Assessment	Ecological Importance of Study Area for Feature
Designated Sites		
Ancient Woodland	Several AWI sites are present within the Site Boundary, along the proposed access tracks to the north and east. The AWI stands are comprised of a mosaic of Ancient Woodland (of Semi-Natural Origin) and Other (on Roy Maps). Despite the above designations, the Native Woodland Survey of Scotland (NWSS) found that the AWI sites were now Plantation on Ancient Woodland Sites (PAWS). This was confirmed during the habitat and vegetation surveys, described in Appendix 6.2, as the AWI sites were comprised of conifer plantation. The AWI sites were recorded as a mosaic of monoculture Sitka spruce and recently felled plantation. Conifer plantation is common within the ESA and wider area, and the AWI within the Site has been heavily altered by land management practices. The AWI is therefore considered to be of Local importance.	Local
Holy Loch LNR/LNCS	The Holy Loch LNR/LNCS is located 1.3 km to the north-east of the Site. While the Holy Loch is located some distance from the Proposed Development, it is hydrologically connected to the Site via the Little Eachaig River and its unnamed tributaries.	**County**

Ecological Feature	Assessment	Ecological Importance of Study Area for Feature
	The Holy Loch LNR/LNCS is designated for the following features: – Habitats: Saltmarsh, Wild Flower Meadow, Woodland, Reedbed and Bog; and – Birds: Bird Assemblage (see Chapter 7). The habitats mentioned above are rare in the wider area and, due to recognition of the LNR/LNCS by the local authority, this feature is considered to be of County importance.	
Annex 1 Habitats		
H7130 Blanket Bogs	Phase 1 Habitats: E1.6.1 Blanket Bog and E1.7 Wet Modified Bog NVC Codes: M1, M2, M3, M17, M19 and M25 (on peat >0.5 m) This habitat is common throughout the ESA, accounting for 34.06% of recorded habitats. It is largely limited to the exposed, open ground within the centre of the ESA. While blanket bog communities were located across the ESA, the extent of sphagnum cover was noted to be variable from 'frequent' to 'rare,' indicating a peatland condition closer to 'modified' than to 'near natural.' *Sphagnum capillifolium* and *S. papillosum* were the only sphagnum species recorded within the ESA and were often only found in abundance in the wettest areas to the north-east. There is also evidence of management throughout the ESA, in the form of grazing pressure from livestock. However, despite the above, blanket bog habitats are rare in the area surrounding the Site, as the ESA is largely surrounded by conifer plantation. As a result, the Site is considered to be of County level importance for blanket bog habitats.	**County**
H4030 European Dry Heaths	Phase 1 Habitat: D1 Dry Dwarf Shrub Heath NVC Codes: H10 and H12 Stands of dry heath were recorded within the Site, in the north-east of the ESA. Dry heath was commonly located adjacent to blanket bog habitats; this included areas where blanket bog transitioned to dry heath on increased gradients and/or thinner peat, as well as where blanket bog has been converted to dry heath due to historic management and ongoing agricultural land uses. As the depth of peat reflects the underlying topography, these two habitat types often occurred in a mosaic over a short distance. Where it was recorded along watercourse embankments, it typically occurred in a mosaic with bracken or acid grassland. Dry heath forms a small part (4.30%) of the overall mosaic of upland habitats which are the ESA. While it is a functional example of an Annex 1 habitat, it is common in the wider landscape. Heath within the ESA has also been actively managed, but ongoing and historical, and as a result the condition of heathland habitats are more modified than natural. As a result, the Site is considered to be of Local importance for dry heath habitats.	Local
H7230 Alkaline Fens	Phase 1 Habitat: E2.2 Basic Flush NVC Code: M10 The NVC community that represents this Annex 1 habitat was recorded twice, in the west of the ESA, forming localised flushes in areas of blanket bog. While this habitat has not been confirmed as groundwater-dependent, all such communities have been treated as potentially GWDTE to provide a precautionary assessment (see Chapter 8). This habitat is inherently scattered and not extensive, although it forms part of the upland habitat mosaic within the ESA and is likely to be present, although scattered, in the wider landscape. As a functional Annex 1 habitat that is relatively uncommon in the wider landscape, the Site is considered to be of Local level importance for alkaline fens.	Local
Scottish Biodiversity List Habitats		

Ecological Feature	Assessment	Ecological Importance of Study Area for Feature
Wet Woodland	NVC Code: W4 (Wet Woodland), W11 and W17 (Upland Birchwoods) These habitat types were only recorded on the northern slopes of the ESA, outwith the Proposed Development area. Birch-dominated woodlands are common within the upland environment within the west of Scotland, albeit, the woodlands which were recorded within the ESA were relatively limited in extent as they were located within the context of extensive conifer plantation. However, further extents of similar habitats are expected to be present in the wider landscape. Due to the limited extent of these habitat types within the ESA, the Site is therefore considered to be of Local level importance for Wet Woodland and Upland Birchwoods.	Local
Upland Birchwoods		
Upland Heathland	NVC Codes: H10 and H12 Considered in the context of Annex 1 habitats above.	Local
Blanket Bog	NVC Codes: M1, M2, M3, M17 and M19 Considered in the context of Annex 1 habitats above.	**County**
Upland Flushes, Fens and Swamps	NVC Codes: M6, M10, M23 and M25 A range of flushes and mire types were scattered throughout the ESA, which contribute to the diversity of the habitat mosaic present. This habitat type is expected to be present scattered throughout the upland landscape in the wider area. The Site is therefore considered to be of Local level importance.	Local
Rivers	Phase 1 Habitat: G2 Running Water Many of the watercourses within the ESA qualify as a priority habitat as they represent headwaters. However, such watercourses are common and widespread in upland areas. Many ecological features rely on the watercourses and they are hydrologically linked to the wider landscape. The Site is considered to be of Local level importance for this habitat.	Local
Protected Species		
Bats	Bat activity across the Site was generally low and the assemblage was dominated by common and widespread pipistrelle species (86% of total passes). The ESA is dominated by conifer plantation and open bog habitats, which reduce the Site's suitability for roosting opportunities, and no roosts were recorded during the protected species surveys. However, commuting and foraging opportunities are still present, albeit restricted to forest rides and small watercourses. A conservative approach has therefore been adopted and the Site is considered to be of Local level importance for this species.	Local

6.10 Embedded Mitigation

Design

6.10.1 The following key design considerations were implemented during the iterative design process to avoid or minimise likely significant effects on ecological features:

- Where possible, maintaining a minimum 50 m buffer between infrastructure and watercourses/waterbodies as shown on the 1:50,000 scale Ordnance Survey mapping (see Figure 8.1);
- Minimisation of water-crossings;
- Where possible, avoidance of habitats of conservation interest[1];
- The use of floating track construction methods where deep peat deposits cannot be avoided;
- A minimum 50 m blade clearance from areas of woodland habitats that provide commuting and foraging habitat for bats was observed through felling of areas of conifer plantation; and
- Avoidance of protected species resting sites (including buffers where appropriate).

Good Practice

6.10.2 In determining the potential significance of effects on ecological features, the assessment considers standard good practice measures, which are assumed to be in place for the duration of the construction process and during operation, where relevant.

6.10.3 Measures of relevance to the construction of the Proposed Development are described in Chapter 3 and include:

- Habitats of conservation interest[1] were a guiding feature of the design process. Figure 8.1.1 demonstrates that all infrastructure has been located within areas of shallowest peat, where possible. As a consequence, the most valuable areas of habitats of conservation interest have been avoided, ensuring the most sensitive areas would remain intact, and the wider functionality of the Site's habitat assemblage would persist.
- The Proposed Development infrastructure has been designed to avoid sensitive hydrological receptors by maintaining a minimum of 50 m distance from watercourses, waterbodies or water features.
- Approximately 2.5 km of new track will be built as part of the Proposed Development. Where possible and where reasonably practical, tracks will be of a 'floating' design where peat is over 0.5 m deep. Where peat depths are below 0.5 m, standard tracks will be used. Whilst these general principles have been adhered to, the decision of what type of track to use has been determined on a case-by-case basis and, in addition to considering peat depths, the gradient of the terrain has also been taken into account. In total, approximately 150 m of new tracks will be of a floating design, with a further 3.8 km of existing track proposed for upgrade.

6.10.4 The assessment also assumes that the following measures would be adopted and implemented during the construction phase of the Proposed Development:

- The development and implementation of a CEMP (see OCEMP in Appendix 3.1), which will be set out guidance on compliance with nature conservation legislation and policy. This will include:
  - the production of, and compliance with, a Pollution Prevention Plan (PPP) and adherence to guidelines on Pollution Prevention (GPP). This will include measures to control surface water and sediment management as well as fuel and materials storage which will significantly reduce the likelihood and severity of pollution events.
  - the production of, and compliance with, Construction Method Statements (CMS).
  - the production of, and compliance with, a Ground and Surface Water Monitoring Plan (GSWMP)). This will include the application of appropriate buffers around watercourses, which will protect riparian habitat while reducing disturbance and the likelihood of pollution events.
  - the use of temporary access tracks and 'brash mats', or other appropriate methods, to reduce potential for soil erosion as appropriate.
  - the production of, and compliance with, a Soil and Peat Management Plan (SPMP) (following the principles set out in the Outline Peat Management Plan (Outline PMP) presented in Appendix 8.1.
  - the production of, and compliance with, a Site Waste Management Plan (SWMP).
  - the production of, and compliance with, a Construction Traffic Management Plan (CTMP).
  - the production of, and compliance with, an Outdoor Access Management Plan (OAMP, Appendix 10.2).
- A BES is included in Appendix 6.5 and demonstrates how the Site's wider ecological value can be enhanced through targeted intervention.
- The appointment of an Advisory ECoW to advise, monitor and report on compliance with relevant legislation, policy and project specific mitigation during construction. The ECoW will report directly to the applicant where immediate remediation or correction is required. The ECoW will be present during construction to provide on-site support and advice. The ECoW will provide regular reports which will be made available to all relevant site staff including the applicant. A detailed Scope of Works for the role will be agreed with Argyll and Bute Council in consultation with NatureScot before construction commences.

Micrositing

6.10.5 The application for consent includes a request for up to 100 m of micrositing tolerance for site infrastructure where ground investigation works and/or geotechnical surveys find ground conditions to be unsuitable for construction. Any micrositing of infrastructure will be based on a review of existing ecological data and the completion of pre-construction surveys, to take into consideration the potential for direct encroachment onto protected species features, sensitive habitats or indirect alteration of hydrological flows supporting sensitive habitats.

6.10.6 Any micrositing will also take into consideration any buffer distances on protected features identified following further pre-construction surveys (see Good Practice Mitigation above). With these micrositing

precautions and procedures in place, should micrositing be utilised, the significance of effect on ecological receptors will not be greater than those predicted within this assessment.

6.11 Scope of the Assessment

Effects Scoped into the Assessment

6.11.1 This assessment concentrates on the effects of construction and operation of the Proposed Development upon those ecological receptors identified during the review of desk-based information and field surveys which could be subject to significant effects (i.e. features valued at County level importance or higher). In determining these receptors, embedded design and good practice mitigation measures have been considered. Effects upon the following features are therefore assessed in detail:

- Effects during construction on designated sites, specifically Holy Loch LNR/LNCS; and
- Effects during construction on habitats of conservation interest[1], specifically blanket bog.

6.11.2 Table 6.7 provides a summary of the Proposed Development interactions that will be assessed in relation to each of the above key receptors.

Table 6.7 – Identification of Likely Effects

Ecological Feature	Development Activity	Likely Effect Pathway	Likely Effect
Holy Loch LNR/LNCS	While no development activity will be taking place within the Holy Loch LNR/LNCS, the following works, which will be undertaken within the Site, have the potential to hydrologically affect the LNR/LNCS: – Excavation for construction of turbine platforms and infrastructure. – Construction of turbine platforms and infrastructure. – Presence and use of fuelled plant. – Modifications to watercourse crossings. – Increased vehicle traffic.	– Changes in water quality and volume. – Pollution event.	Disturbance
Habitats of Conservation Interest (Blanket Bog)	– Surface vegetation clearance. – Excavation for construction of turbine platforms and infrastructure. – Construction of turbine platforms and infrastructure. – Presence and use of fuelled plant. – Habitat restoration and enhancement measures.	– Physical removal of habitat. – Changes in water quality and volume. – Change in hydrological regime of peatland habitats. – Pollution event. – Habitat resources restored and created.	Habitat Loss Habitat Fragmentation

Effects Scoped Out of the Assessment

6.11.3 Effects during operation on ecological features are scoped out as per the Scoping Report. In addition, effects during operation on bats are scoped out due to the limited Ecological Importance of the Site for bats. An assessment of effects during the decommissioning phase has not been undertaken in the EIA as the baseline against which to assess likely significant decommissioning effects is not known. However, a method statement will be prepared and agreed with the relevant statutory consultees prior to decommissioning of the Proposed Development, and it is anticipated that any effects associated with decommissioning will be similar to or less than those associated with construction.

6.11.4 In addition to the above, on the basis of the Ecological Importance assessment in Table 6.6, some ecological features identified in the Scoping Report have been identified as having below County level Ecological Importance and therefore cannot experience significant effects within the context of EIA terminology. No subsequent assessment of potential effects on these features is required.

6.12 Assessment of Likely Significant Effects

6.12.1 The assessment of effects is based on the development description as outlined in Chapter 3. Unless otherwise stated, potential effects identified are considered to be adverse.

Potential Construction Effects

6.12.2 In this section, drawing on Table 6.7, an assessment is made of the significance of likely effects on ecological features during construction, in the absence of embedded mitigation.

Holy Loch LNR/LNCS

6.12.3 The Proposed Development has the potential to cause indirect effects on the Holy Loch LNR/LNCS outwith the Site.

6.12.4 Potential construction effects are associated with excavation and construction works, presence of fuelled plant, modifications to watercourse crossings and increased vehicle presence within the Site. This may potentially result in changes to hydrological regime (including water quality and volume, or as a result of a pollution event or silt run-off). However, Holy Loch LNCS is approximately 4 km downstream from the Proposed Development at its closest point, with the LNR boundary further beyond. In addition, strict pollution prevention measures will be implemented via the CEMP for work in proximity to watercourses, including with regards to re-fuelling, control of run-off, and dust prevention.

6.12.5 In considering the above, the significance of potential effects is detailed in Table 6.8. Significance is assessed within the context of the Ecological Importance of the Holy Loch LNR/LNCS (see Table 6.7).

Table 6.8 – Assessment of Significance of Likely Construction Effects – Holy Loch LNR/LNCS

Parameter	**Likely Effect**
	Disturbance
Extent	The Holy Loch LNR/LNCS may be affected by construction works due to a pollution event and/or increased vehicle traffic resulting in silt or dust affecting downstream habitats. However, the LNCS is located approximately 4 km downstream of the Proposed Development at its closest point, with the LNR boundary is further beyond. During a pollution event, any pollutant would be limited and diffuse due to the distance of the LNR/LNCS from the Proposed Development, although any pollution could spread throughout the LNR/LNCS due to tidal action.
Magnitude	The potential for run-off and dust pollution will be minimised through the application of the CEMP. In addition to this, the magnitude of a pollution event would be limited and diffuse due to the distance between the designated site and the Proposed Development. The function of the component habitats, such as saltmarsh, would be maintained, and the effect on the conservation status of the LNR/LNCS would be limited.
Duration	Temporary
Frequency	Potentially repeated during construction phase
Reversibility	Reversible
Likelihood	Unlikely
Level of Ecological Importance	County
Significance (EcIA)	Not significant
Significance (EIA)	Negligible (not significant)

Habitats of Conservation Interest: Blanket Bog

6.12.6 The majority of habitats outlined within Table 6.6 are considered to be of Local level Ecological Importance. Habitats which have been identified as having below County level Ecological Importance cannot experience significant effects within the context of EIA terminology and, as such, no subsequent assessment of potential effects is therefore required for these habitats.

6.12.7 However, blanket bog habitats recorded within the Site are considered to be of County level Ecological Importance. While these habitats are largely modified and degraded in condition and species diversity, blanket bog habitats have the potential to contribute to the overall ecological function of the Site and provide connectivity throughout the ESA.

6.12.8 Potential construction effects are associated with vegetation clearance, the excavation and construction of proposed turbine platforms/infrastructure, access track upgrades and presence of fuelled plant. The potential effects have been identified as:

- Direct habitat loss as a result of the removal of habitat; and/or a pollution event; and
- Habitat fragmentation as a result of vegetation removal and/or changes to hydrological regime (particularly within peatland habitats).

6.12.9 Due to the complex topography and vegetation of the ESA, bog communities often occur in mosaic with dry heath communities. Wherever possible, the design process has avoided deeper deposits of peat and therefore both larger expanses and smaller pockets of blanket bog. The steep and varied terrain across much of the Site has limited the practical application of constructing floating tracks across identified areas of deep peat. Nonetheless, where deeper peat could not be avoided and conditions allowed, floating track construction has been incorporated to minimise disturbance.

6.12.10 Approximately 40.24 ha (5.74%) of the Site's total habitat resource is forecast to be impacted by the Proposed Development. Of this, 18.5 ha will be lost as a result of direct loss (based on the Proposed Development footprint), and a further 21.74 ha will be indirectly impacted (determined by a 10 m buffer to the Proposed Development footprint).

6.12.11 Priority peatland habitats impacted by the Proposed Development are considered to comprise NVC communities M1, M2, M3, M17, M19 and M25 (on peat >0.5 m) as per NatureScot's guidance. Approximately 7.41 ha of these blanket bog communities will be directly lost, with an additional 6.66 ha indirectly impacted. In total, this equates to 5.97% of the total blanket bog resource within the ESA.

6.12.12 Table 6.9 details the total area of blanket bog which is to be expected to be lost for site infrastructure.

Table 6.9 – Calculations of Blanket Bog Impacted

Phase 1 Habitat	NVC Codes	Area to be Impacted (ha)	Total of Habitat Type Within the ESA (ha)	% of ESA Habitat Resource to be Impacted
E1.6.1 Blanket Bog	M1	0.00	N/A[5]	0.00
	M2	0.00	N/A[5]	0.00
	M3	0.00	0.07	0.00
	M17	0.79	84.0	0.94
	M19	13.28	151.74	8.75
E1.7 Wet Modified Bog	M25 (on peat >0.5 m)	0.27	2.80	9.57

6.12.13 Table 6.9 above highlights the limited nature of habitat loss within the Site. Less than 5.97% of the blanket bog resource within the ESA will be impacted, which represents a small proportion of the available resource within the ESA. As mentioned previously, areas of blanket bog and wet modified bog are highly modified and disturbed as a result of the current land practices. None of the Proposed Development footprint is considered to be sited upon peatland in near natural condition. The impacts are not considered to adversely affect the viability or integrity of these habitats in a wider context.

6.12.14 Habitat fragmentation, particularly of peat-forming habitats, largely relates to changes in the hydrological regime of the Site as a result of construction activities. The effect on the hydrological regime of habitats is assessed in Chapter 8.

6.12.15 The peat depth assessment has confirmed that the majority of peat soils within the Site are noted to be between ≥0.5 m to <1.0 m in depth, based on peat probing results detailed in Technical Appendix 8.1.

6.12.16 Peatland restoration is proposed within the Site, comprising hag reprofiling (46.59 ha), infill of eroded peat (13.15 ha) and forest-to-bog restoration with translocated peat (14.62 ha); the total restoration proposed is 81.34 ha. This represents a ratio of 1:5.7 (loss:restored).

6.12.17 The areas of forest-to-bog and peat bund restoration form the primary locations for reuse of excavated or translocated peat, with restoration across felled forestry surrounding T1 and T2 (21.68 ha) involving ditch blocking and ground smoothing, and cell bunds implemented near T6 and T7 (11.31 ha) to aid reprofiling and improve stability.

6.12.18 In considering the above, the significance of potential effects on habitats is detailed in Table 6.10. Significance is assessed within the context of the Ecological Importance of the ESA, with these habitats being of County level importance as defined within Table 6.6.

6.12.19 Additional information regarding the proposed peatland restoration is discussed in the section Opportunities for Enhancement, as well as the BES (Technical Appendix 6.5).

Table 6.10 – Assessment of Significance of Likely Construction Effects – Blanket Bog

Parameter	Likely Effect	
	Habitat Loss	**Habitat Fragmentation**
Extent	Habitat loss will occur during the excavation and construction of turbine platforms and infrastructure, surface vegetation clearance and during habitat restoration and enhancement. However, the habitat loss is limited to a small proportion of the blanket bog within the ESA (5.97%) and habitats within the Site are heavily modified due to current and historical land practices.	Habitat fragmentation, through the construction of new access tracks, will occur in the blanket bog habitats within the ESA. These habitats are heavily modified due to current and historical land practices. The network of watercourses will be maintained.
Magnitude	Proposed habitat loss is unlikely to have an effect on the integrity of the blanket bog within the ESA, particularly when the	A commitment to maintain the network of watercourses, through buffer distances and appropriate design of crossings, means that habitat fragmentation is limited.

[5] M1 and M2 bog pools were recorded using point features due to their small size, and were not recorded within mosaics with other habitats. As a result, they are not included within habitat calculations. Locations of these bog pools can be viewed in Figure 6.3b, and are detailed within Annex B, Appendix 6.2.

Parameter	Likely Effect	
	Habitat Loss	**Habitat Fragmentation**
	proposed restoration and enhancement measures are taken into consideration.	Blanket bog habitats of conservation interest within the ESA will retain their structure and viability.
Duration	Permanent	Permanent
Frequency	One-off event during construction	One-off event during construction
Reversibility	Irreversible	Irreversible
Likelihood	Certain	Certain
Level of Ecological Importance	County	County
Significance (EcIA)	Significant at the Local Level	Significant at the Local Level
Significance (EIA)	Minor (not significant)	Minor (not significant)

Potential Operational Effects

6.12.20 On the basis of the Ecological Importance assessment in Table 6.6, the ecological features identified in the Scoping Report have been identified as having below County level Ecological Importance and therefore cannot experience significant effects within the context of EIA terminology. No subsequent assessment of potential effects is required.

6.13 Additional Mitigation and Enhancement

Mitigation

6.13.1 No significant effects, in EIA terms, have been identified, thus no additional mitigation measures are required. This does not, however, negate the requirement for legislative compliance during the construction phase of the Proposed Development. Legislative compliance in relation to habitats, protected species and the aquatic environment would be addressed in the detailed CEMP. An OCEMP is provided in Appendix 3.1.

Biodiversity Enhancement Strategy

6.13.2 The BES (located within Appendix 6.5) seeks to establish broad habitat interventions that will compensate for effects of the Proposed Development and improve the overall ecological status of the Site. Prescriptions include:

- The restoration of eroded peatland within the Site, as compensation for losses of priority peatland habitats, using a variety of techniques appropriate and sensitive to the nature and scale of targeted restoration areas;
- Forest-to-bog restoration, to remove unproductive plantation from blanket bog habitats. This will include the blocking of drainage ditches to 're-wet' the bog;
- Regeneration management, to reduce encroachment of regenerating conifers onto forest-to-bog restoration areas;
- Riparian and non-riparian planting using native broadleaved species. Planting will comprise a combination of continuous and discontinuous shrub and tree-dominated areas. As per best practice, trees will not be planted on peat >0.5 m;
- The restoration and enhancement of areas of Ancient Woodland that are PAWS (currently planted with Sitka spruce) through replanting with native tree species;
- Boxes for pine marten and red squirrel;
- Grazing management, to monitor and design appropriate grazing management techniques post-consent; and
- Measures to enhance habitats, and therefore foraging resources, for a number of upland bird species, including golden eagle and black grouse.

6.14 Residual Effects

Residual Construction Effects

6.14.1 Subject to adherence with all embedded design and species-specific good practice mitigation, no significant residual construction effects have been identified as all construction effects are determined to be not significant in the context of the EIA Regulations (Table 6.4).

Residual Operational Effects

6.14.2 Subject to adherence with all embedded design and good practice mitigation, no significant residual effects (in EIA terms; see Table 6.4) are predicted as a result of operation of the Proposed Development.

6.15 Cumulative Assessment

6.15.1 Effects arising from the construction and operation of the Proposed Development have the potential to contribute to cumulative effects, when combined with those of other developments, including wind farms, on ecological receptors. While specific published guidance on appropriate geographical search areas for cumulative wind farms is not available, convention and current practice dictate consideration of projects within a 5 km radius offers an appropriate and meaningful context within which to consider cumulative effects.

6.15.2 This includes schemes within 5 km which are the subject of a valid planning application, or which have been consented but are not operational, and where there is sufficient information to enable them to be included in the assessment. Operational wind farms are not considered in this cumulative assessment of effects because these are considered to be part of the baseline conditions.

6.15.3 In order that an assessment of cumulative effects is proportionate and pragmatic, cumulative effects are considered where site-specific ('in-isolation') effects reach a minimum threshold of Minor (Local/Study Area) residual significance following the application of mitigation, i.e. effects are detectable. In this scenario, the potential significance of cumulative effects is considered in relation to the ongoing viability of each affected ecological receptor within the relevant geographical context.

Cumulative Construction and Operational Effects

6.15.4 The following renewable energy generation schemes are within 5 km of the Site:

- Inverchaolain (Scoping) – 13 turbines, 4.4 km south-west.

6.15.5 However, as Inverchaolain is in the Scoping stage, there is not sufficient information, such as a detailed ecological baseline and extent of likely impacts, to enable the scheme to be included in the assessment. As such, no cumulative assessment is undertaken with regards to ecological features.

6.16 Interrelationship Between Effects

6.16.1 The potential for interrelationships between effects has been considered, specifically inter-relationships between effects described in:

- Chapter 7: Ornithology, potential effects on avian species and designated sites with avian species; and
- Chapter 8: Geology, Hydrology and Peat, in relation to the discussion and assessment of GWDTEs.

6.16.2 Interconnectivity has been identified in this assessment with regards to hydrological connectivity of habitats and suitability of habitats for bird species such as golden eagle. As such, habitat connectivity and golden eagle have been considered in the development of the habitat restoration and creation proposals in the BES.

6.17 Monitoring

6.17.1 As identified above, under 'Good Practice Mitigation', an Advisory Environmental Clerk of Works (ECoW) would be appointed to monitor compliance with the CEMP and all other construction-phase environmental commitments. The ECoW's terms of reference would be established in consultation with stakeholders, prior the commencement of works.

6.18 Summary of Significant Effects

6.18.1 No likely significant effects will be experienced as a consequence of the Proposed Development.

6.19 References

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