# Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 4

Non-Technical Summary

Document prepared by Envams Ltd for: Beinneun 2 Ltd

July 2025

# Contents

# 1 INTRODUCTION

## 1.1 BACKGROUND

This document is the Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report prepared for Beinneun 2 Wind Farm Ltd (the Applicant) in support of an application to the Scottish Ministers for a consent under Section 36 of the Electricity Act 1989, with deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997.

The application seeks consent to construct, operate, and decommission Beinneun 2 Wind Farm ("the Development"), a renewable energy development with a generation capacity exceeding 50 megawatts (MW).

The Development qualifies as EIA development under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended), and this EIA Report presents the results of the assessment. The purpose of the EIA is to assess the likely significant environmental effects of the wind farm and to propose mitigation where appropriate. This EIA Report is the documented output of the EIA process.

## 1.2 THE WIND FARM

The Development will consist of up to 19 wind turbines, each with a maximum blade tip height of up to 200 metres, with a generating capacity of up to approximately 140 megawatts (MW). The Development also includes a Battery Energy Storage System (BESS) with a maximum export capacity of approximately 160 MW. The combined export capacity of the Development will be greater than 100 MW but not more than 300 MW.

Other infrastructure includes access tracks (around 17.5 km), a substation compound, a construction compound, a meteorological mast, underground cables, and borrow pits for stone extraction. Access will be taken from a new access point on the A87 on the west side of the Site near Loch Loyne.

The primary purpose of the Development is to generate electricity from a renewable source and support carbon reduction targets by displacing fossil fuel-based generation.

A full description of the wind farm and its physical and operational characteristics is provided in Chapter 4: Development Description of the EIA Report, summarised in Chapter 4 of this NTS. The layout has evolved through a cyclical design process, influenced by environmental considerations and stakeholder feedback.

## 1.3 THE APPLICANT

Beinneun 2 Ltd is the applicant for the proposed Development. The project is being developed by a team with extensive experience in renewable energy, including the delivery of onshore wind farms across the UK. The company has overseen the design, environmental assessment, and consultation process in preparation for this application.

## 1.4 THE PURPOSE OF THE NTS

This NTS provides a clear and accessible summary of the key findings of the EIA Report, written in non-technical language to inform members of the public, stakeholders, and decision-makers.

It highlights the nature of the wind farm, its potential environmental impacts, and the proposed mitigation measures.

The NTS is supported by key figures available in Volume 2a of the EIA Report, with the site location and layout plans (Figures 1.1 and 4.1) also included within this NTS document.

# 2 EIA METHODOLOGY

## 2.1 INTRODUCTION

This section explains how the EIA process has been used to assess the likely significant environmental effects of the proposed Beinneun 2 Wind Farm ("the Development"). It

outlines how consultation and technical studies have informed the development design and EIA Report, and how potential effects have been identified, mitigated, and reported.

The assessment follows best practice guidance and complies with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended).

## 2.2 EIA PROCESS

The EIA process is designed to ensure that environmental issues are considered at all stages of project planning. For Beinneun 2, this process included:

- Desk-based and field surveys to understand existing environmental conditions;
- Engagement with statutory and non-statutory consultees, including a formal Scoping process and pre-application consultation with The Highland Council;
- Use of professional judgement, relevant legislation, and guidance to assess likely significant effects;
- Identification and incorporation of design changes and mitigation to avoid or reduce impacts;
- Assessment of potential cumulative effects with other developments; and
- Public consultation events and stakeholder feedback.

Each environmental topic is assessed in a dedicated technical chapter (Chapters 5 to 14) of the EIA Report.

## 2.3 CONSULTATION

The EIA was informed by extensive consultation, including with the Scottish Government Energy Consents Unit (ECU), The Highland Council, SEPA and NatureScot.

A formal Scoping Opinion was received in February 2024. This identified the topics to be covered in the EIA, which include:

- Landscape and Visual;
- Ecology;
- Ornithology;
- Archaeology and Cultural Heritage;
- Noise;
- Climate Change;
- Traffic and Transport;
- Hydrology, Hydrogeology and Peat;
- Socio-economics, Tourism and Recreation, and Land Use;
- Other Issues (e.g. Aviation and Telecommunications).

Public consultation was also undertaken. This included public events in Invergarry and Invermoriston in March 2025, and an online event in April 2025. A dedicated website provided updates and received feedback throughout.

Topics raised by consultees and the public, particularly around visual impact and noise, were addressed within the relevant chapters of the EIA Report.

## 2.4 CONTENT OF THE EIA REPORT

The EIA Report includes assessments of the potential environmental effects of the wind during its construction, operation, and decommissioning phases. It covers a wide range of topics such as landscape and visual impact, ecology, cultural heritage, noise, hydrology, and socio-economic effects.

Each technical chapter in the EIA Report follows a consistent format:

- Description of the topic and assessment methodology;
- Summary of consultation feedback;
- Baseline conditions (the state of the environment in the absence of Beinneun 2 Wind Farm);
- Assessment of predicted effects on the environment, taking into account embedded mitigation;
- Assessment of predicted residual effects, taking into account any additional mitigation;

- Consideration of cumulative effects of the wind farm together with other proposed developments; and
- A summary statement on whether, and which, effects are considered significant under the EIA Regulations.

### 2.5 BASELINE AND FUTURE CONDITIONS

The baseline for each topic was established through a combination of desk studies, field surveys, and data gathered from other developments in the area. This provided an understanding of the environmental context in the absence of the wind farm. Where relevant, future baseline conditions were considered, including the potential effects of climate change on sensitive environmental features.

### 2.6 ASSESSMENT OF SIGNIFICANCE

The significance of each environmental effect was generally determined by evaluating two key factors:

- The sensitivity of the receptor (such as a habitat, heritage site, or community) to the type of change proposed, i.e., a wind farm; and
- The magnitude of the change caused by the Development.

Using these factors, each effect was categorised as negligible, minor, moderate, or major, and either significant or not significant under the EIA Regulations. Professional judgement and guidance were applied to ensure consistency across topics. For some topics, a slightly different approach was taken, and that is described in those chapters.

### 2.7 MITIGATION AND MONITORING

The design of Beinneun 2 Wind Farm has already avoided and/or reduced impacts to a large extent and this is known as “embedded mitigation.” Additional mitigation has also been proposed in some cases, to further reduce potential effects, including construction practices and monitoring requirements, which are described in each technical chapter. Where necessary, post-consent monitoring will be undertaken to ensure mitigation measures are effective and allow for adjustments if needed.

### 2.8 RESIDUAL EFFECTS

Residual effects are those that remain after mitigation is applied. These have been assessed in each technical chapter, and where significant residual effects remain, these are highlighted in the summary tables and conclusions of the EIA Report.

### 2.9 CUMULATIVE EFFECTS

The assessment also considered how the effects of the wind farm might interact with those from other proposed wind farm developments in the area. Where projects are already operational or consented, their combined influence was considered in relation to each environmental topic.

### 2.10 ASSUMPTIONS AND LIMITATIONS

All assessments in the EIA Report are based on the most up-to-date design and environmental data available at the time of submission. Some assumptions are necessary due to data availability, environmental variability, or changes in baseline conditions. These are clearly stated in each topic chapter. Overall, sufficient information was available for a robust assessment of environmental effects.

# 3 SITE SELECTION AND DESIGN EVOLUTION

### 3.1 INTRODUCTION

This section explains how the Site for the Beinneun 2 Wind Farm was selected and how its design has developed over time. It describes the environmental, technical, and planning considerations that shaped the proposed layout. The design process aimed to balance maximising renewable energy generation with minimising environmental effects through an iterative and informed approach.

## 3.2 SITE LOCATION AND CHARACTERISTICS

The Site is located approximately 5.4 km northwest of Invergarry and 11.3 km southwest of Fort Augustus, in the Highland Council area. Covering approximately 1,154 hectares, it comprises open moorland with variable topography, ranging from 260 to 660 metres above sea level. There is no existing network of tracks, and the surrounding area includes upland heath, commercial forestry, and several water bodies, as well as the operational Beinneun and Millennium Wind Farms.

The land is owned and managed by the Ardochy and Aberchalder Estates, with existing land uses including deer stalking. There are no formal public access routes within the Site, with the nearest core path being at around 3.5 km away, and other trails in the area including the River Garry Path and the Meall Dubh Trail.

## 3.3 SITE SELECTION PROCESS

The site was selected based on a comprehensive review of environmental, technical, planning, and economic factors. Key considerations included:

- High wind resource and suitable topography;
- Proximity to viable grid connection points;
- Suitable access from existing roads and delivery ports;
- Absence of national or international designations on-site;
- Sufficient distance from residential properties;
- Limited peat presence; and
- A history of successful neighbouring wind energy projects (Beinneun, Beinneun Extension, and Millennium Wind Farms).

The principal landowner of the Site, who was also involved in the neighbouring wind farms, identified this Site as a suitable opportunity for further wind energy generation.

## 3.4 DESIGN STRATEGY AND EVOLUTION

The design of the wind farm evolved over several stages to address environmental and technical requirements while maximising energy generation. This included balancing turbine placement with visual impact, peat depth, ecological sensitivities, and proximity to heritage assets or homes.

From an initial scoping layout of 22 turbines, the design was refined through iterative stages, resulting in a final layout of 19 turbines (each up to 200 metres tip height), along with access tracks, substation, a Battery Energy Storage System (BESS), construction compound, and other supporting infrastructure. These refinements aimed to reduce environmental effects, improve turbine spacing, and optimise visual balance from key viewpoints.

## 3.5 KEY ENVIRONMENTAL CONSIDERATIONS

**Landscape and Visual:** Turbines were located within the central part of the Site and set back from the southern and western edges to minimise visual effects from Loch Garry and the A87. Significant visual effects are limited to a short stretch of the A87.

**Cultural Heritage:** No designated heritage assets are located within the Site boundary. Non-designated assets were avoided where practicable, and the setting of nearby designated features benefited from layout changes made for landscape reasons.

**Ecology and Ornithology:** Field surveys identified key ecological sensitivities, including peatland habitats and protected species such as otter, pine marten, red squirrel, wildcat, and badger. Turbines and infrastructure were sited to avoid the most sensitive areas. Ornithological studies over two years informed turbine positioning in relation to flight paths and breeding areas for protected bird species.

**Peat and Hydrology:** Peat depth was generally shallow, though pockets of deeper peat were identified and avoided where possible. Infrastructure was sited away from watercourses with a design buffer of 50 m, and the number of watercourse crossings was minimised.

**Noise and Residential Amenity:** Turbines were located to meet national noise guidance for residential properties, with background noise data used to inform setback distances and turbine operation limits.

**Access and Infrastructure:** Access will be taken from the A87 in the west of the site, near Loch Loyne, via a new entrance. Infrastructure design considered efficient turbine delivery, emergency access, and avoidance of water-sensitive areas.

### 3.6 CONCLUSION

The final design of the Beinneun 2 Wind Farm reflects a robust and responsive process, incorporating environmental data, consultation feedback, and best practice. The resulting layout balances the need for renewable energy generation with the protection of local environmental and community interests. It represents a carefully considered evolution of the initial concept, aiming to maximise benefits and minimise effects in line with national planning policy and design guidance.

# 4 WIND FARM DESCRIPTION

### 4.1 INTRODUCTION

This section describes the Development, including its key components, infrastructure, and how it will be constructed, operated, and eventually decommissioned. It also highlights design elements that have been included to reduce potential environmental effects.

### 4.2 OVERVIEW OF THE WIND FARM

### 4.3 KEY COMPONENTS

The main components of the Development include:

- Wind turbines: up to 19 turbines, each with a tip height of up to 200 m. Turbines will have three blades and be light grey in colour. Turbines will rotate in the same direction and be controlled by an automated system to optimise energy output.
- Foundations and crane hardstandings: each turbine will be supported by a concrete foundation (typically 25 m in diameter), with adjacent crane hardstanding areas of up to 3,600 m² for turbine assembly and maintenance.
- Access tracks: approximately 17.5 km of new access tracks will connect the Site. These will be constructed using cut-track techniques with appropriate drainage and watercourse crossings (23 in total), designed to minimise environmental impacts.
- Meteorological mast: A 149.9 m mast will be installed to monitor wind conditions.
- Electrical infrastructure: underground cables will connect turbines to the substation and BESS, generally routed alongside access tracks.
- Substation compound: a 100 m x 100 m substation compound will be located in the southeast of the Site. It will house the control building and necessary grid connection equipment.
- BESS compound: located adjacent to the substation, a 100 m x 100 m BESS compound will consist of around 27 battery containers and supporting equipment. It will help store and manage the power generated.
- Construction compounds: two compounds will be used during the build period, one near the Site entrance and one at the substation/BESS location, each providing space for offices, parking, and equipment laydown.
- Aviation lighting: turbines above 150 m will be lit in accordance with Civil Aviation Authority (CAA) requirements. A proposal to minimise lighting impacts has been submitted to the CAA, including reduced-intensity lights and lighting only on selected turbines.

Borrow pits will be used to source stone to construct the access tracks and areas of hardstanding needed for the Development. Four areas within the site have been identified for this purpose.

### 4.4 CONSTRUCTION PHASE

Construction is expected to last approximately 18 months. It will include access track construction, foundation installation, turbine delivery and erection, and infrastructure works. Materials such as stone, steel, and concrete will be required, with borrow pits on-site expected to meet most stone needs.

Construction activities will be managed under a Construction Environmental Management Plan (CEMP) and include standard health and safety procedures, waste management protocols, and restrictions on public access within construction zones. Some plant and compounds may be retained for operational use. An Outline CEMP is included with the application, as Technical Appendix A4.1 in the EIA Report.

### 4.5 OPERATION PHASE

The wind farm is expected to operate for up to 40 years. Routine maintenance will include turbine inspections, servicing, and occasional component replacement. Tracks and infrastructure will be maintained throughout.

Public access to the wider Site will generally be available during operation.

### 4.6 DECOMMISSIONING

At the end of its operational life, the Development will be decommissioned. Turbines will be dismantled and removed from the Site. Foundations will be broken up to about 1 metre below ground level and the Site will be restored. Some access tracks and infrastructure may be retained by the landowner if useful for ongoing land management. The decommissioning period is expected to last around 12 months.

## 5 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

### 5.1 INTRODUCTION TO CHAPTER

The Landscape and Visual Impact Assessment of the EIA Report assesses the potential effects of the Development on the surrounding landscape and views. The assessment was carried out by qualified Chartered Landscape Architects following best practice guidance from the Landscape Institute and NatureScot.

### 5.2 WHAT FEATURES MIGHT BE AFFECTED?

The wind farm is located in upland moorland to the north of Loch Garry, in a relatively remote area of the Highland Council region. The surrounding area includes glens, lochs, forested slopes, and some small rural settlements such as Faichem and Invergarry. The Site lies near existing wind farms, including Beinneun, Millennium, and the consented Bunloinn development.

Key receptors that could be affected include:

- Residents and road users near the A87 and within Glen Garry;
- Recreational users of hill paths and trails within 5 km of the Site;
- Viewpoints and designated landscapes, such as Special Landscape Areas (SLAs) and the Glen Affric National Scenic Area (NSA); and
- Night-time viewers, due to aviation lighting on turbines.

Views of the proposed wind farm would generally be confined to upland areas or the western and southern edges of the Site. The most notable visibility would be from short stretches of the A87 and from some local roads and open hillsides near Loch Garry.

### 5.3 WHAT ARE THE POTENTIAL EFFECTS?

The main potential effects assessed include:

- Changes to landscape character, especially where turbines introduce new features into open upland views;
- Visual impacts on communities, recreational users, and travellers, particularly near the Site;

- Effects on the special qualities of designated landscapes, though only very limited visibility is predicted from areas such as the Glen Affric NSA or Loch Lochy and Loch Oich SLA;
- Night-time visual effects, due to required red aviation lighting; and
- Cumulative effects, where the new turbines may be seen in combination with existing and proposed wind farms.

Significant visual effects are predicted only for users of the A87, particularly where close and open views of turbines occur.

No significant effects are predicted for designated landscapes, landscape character, or night-time receptors.

### 5.4 HOW WILL THE EFFECTS BE MANAGED?

The wind farm layout was developed through an iterative design process to reduce landscape and visual effects. Measures included:

- Setting turbines back from the most visible hillsides near the A87;
- Minimising visibility from key viewpoints and avoiding siting turbines on prominent ridgelines; and
- Proposing to use aviation lights that dim automatically in good visibility (from 2000 candela down to 200), and having lights on only nine turbines, subject to Civil Aviation Authority approval.

Design guidance from Highland Council and NatureScot was followed throughout, and visual effects were modelled using Zone of Theoretical Visibility (ZTV) maps and photomontages.

Cumulative effects with nearby wind farms (including Culachy, Loch Liath, and Millennium East) were assessed and found not to alter the main conclusions of the assessment.

### 5.5 WHAT ARE THE OVERALL EFFECTS?

The assessment concluded that:

- Significant visual effects would occur only from short stretches of the A87, where turbines would be seen in proximity and in open views;
- No significant effects are predicted on landscape character, designated landscapes, or night-time receptors;
- Night-time effects from aviation lighting would be visible in some areas, especially Glen Garry, but these are not significant;
- Cumulative visual effects with other wind farms would be minor and would not change the conclusions of the assessment.

Overall, the Development is assessed as having limited and localised visual effects that are significant only on one receptor, users of the A87 in close proximity to the site. This is less than effects of typical wind farms of this scale.

## 6 ECOLOGY

### 6.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report assesses the potential effects of the Development on important ecological features, including designated sites, habitats, and protected non-avian species such as badgers, otters and bats. The assessment considers the likely effects during construction, operation, and decommissioning of the Development. It is based on detailed desk studies, field surveys undertaken in 2024 and 2025, and consultation with relevant nature conservation organisations.

### 6.2 WHAT FEATURES MIGHT BE AFFECTED?

No statutory nature conservation designations lie within the Site boundary. The nearest internationally designated site is the River Moriston Special Area of Conservation (SAC), located 2 km to the north, designated for Atlantic salmon and freshwater pearl mussel. Two

Sites of Special Scientific Interest (SSSIs) are located within 7 km of the Site (Garry Falls and South Laggan Fen).

Thirty-four patches of woodland within 2 km of the Site boundary are listed on the Ancient Woodland Inventory (AWI). One small area of ancient woodland partially overlaps the Site boundary, but no tree felling or direct impacts are anticipated.

The Site supports a range of habitats, with blanket bog and wet modified bog being the most ecologically sensitive. Other habitats include dry heath, marshy grassland, conifer plantation, and small areas of native woodland. Surveys confirmed evidence of badger activity, otter use of watercourses, occasional pine marten presence, and foraging and commuting bats (primarily common and soprano pipistrelle, with very low activity of Myotis and brown long-eared bat). Reptiles were not recorded but suitable habitat exists.

No fish were recorded within watercourses on the Site boundary, and freshwater pearl mussels are absent from local streams, although they are present further downstream in the River Moriston SAC.

## 6.3 WHAT ARE THE POTENTIAL EFFECTS?

Construction activities could result in direct loss of bog habitat under turbine bases, tracks and other infrastructure. There is also potential for indirect effects on bog and wetland habitats due to changes in drainage or localised drying of peat.

Disturbance or injury to protected species could occur if works are not carefully managed, particularly for otter and badger. Bats could be at minor risk of collision with turbine blades during operation, although activity levels were low and the Site is considered to be of low risk to local bat populations.

Indirect effects on the River Moriston SAC could arise during construction if sediment or pollutants were to enter connected watercourses, potentially affecting salmon and freshwater pearl mussel populations.

Cumulative effects were considered in relation to other wind farms nearby. No combined effects of ecological significance were identified.

## 6.4 HOW WILL THE EFFECTS BE MANAGED?

The Development has been designed to avoid sensitive features where possible, including siting turbines away from deep peat, watercourses, and native woodland. Standard environmental controls will be implemented through a Construction Environmental Management Plan (CEMP) to prevent pollution, manage runoff, and protect water quality. A Species Protection Plan (SPP) will ensure pre-construction surveys and exclusion zones for otter, badger, and reptiles.

A 50-metre buffer from watercourses will be maintained except at designed crossing points, which will be constructed using best practice methods to protect aquatic ecology. Turbine siting respects minimum recommended distances from bat foraging habitat to minimise collision risk.

An Outline Habitat Management Plan (OHMP) has been prepared, proposing restoration and enhancement of approximately 130 hectares of degraded peatland, additions to riparian woodland areas and planting of around 130 hectares of low density broadleaf woodland to benefit black grouse.

An experienced Ecological Clerk of Works (ECoW) will oversee all works with potential ecological effects, ensuring mitigation measures are implemented correctly.

## 6.5 WHAT ARE THE OVERALL EFFECTS?

With the above mitigation and enhancement measures in place, the Development is predicted to have:

- No significant effects on designated ecological sites, including the River Moriston SAC;
- Minor and not significant effects on blanket bog and wet modified bog habitats, with long-term net benefits from peatland restoration;
- No significant residual effects on badger, otter, bats or other protected species;

- No cumulative effects in combination with other developments.

The outline HMP (which is provided in Technical Appendix A6.5, in Volume 3 of the EIA Report) proposes significant enhancement of habitats, in addition to mitigation measures, as set out above. These measures will deliver long-term ecological gains well beyond the scale of habitat loss.

Overall, the Development is expected to result in no significant adverse effects on ecology, and deliver effective mitigation and significant enhancement of biodiversity in the long term, due to extensive habitat enhancement measures that will improve the ecological condition of the Site.

# 7 ORNITHOLOGY

## 7.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report assesses the potential effects of the Development on bird species and their habitats. The assessment was undertaken by experienced ecologists and ornithologists in line with national guidance, using survey data collected over two years.

The focus was on identifying whether birds of conservation concern might be disturbed or displaced by the Development, or whether important breeding or foraging areas might be affected.

## 7.2 WHAT FEATURES MIGHT BE AFFECTED?

The Site includes moorland and watercourses, which can provide habitat for a range of upland and woodland bird species. There are also areas nearby designated for their importance to birds, including:

- Glen Affric to Strathconon Special Protection Area (SPA) – designated for golden eagle, located more than 9 km away;
- River Spey SPA – designated for common sandpiper and other species, located over 20 km away; and
- Loch Shiel SPA – designated for black-throated diver and other species, also over 20 km away.

While the Development does not overlap with these protected sites, it lies within the potential wider foraging range of some protected species, particularly golden eagle and black-throated diver.

The bird species considered in the assessment were selected based on their conservation status, survey results, and potential sensitivity to wind farm development. Key species included:

- Golden eagle;
- Black-throated diver;
- Hen harrier;
- Red-throated diver;
- Osprey;
- Merlin;
- Greenshank;
- Curlew; and
- Skylark, among others

## 7.3 WHAT ARE THE POTENTIAL EFFECTS?

The main potential effects on birds include:

- Disturbance during construction, especially for nesting birds;
- Loss or alteration of habitat due to infrastructure such as tracks and turbine bases;
- Displacement from foraging or nesting areas during wind farm operation; and
- Risk of collision with turbine blades, particularly for large birds like golden eagle or diver species.

Cumulative effects were also assessed that is, whether the Development might add to impacts already associated with other nearby wind farms.

### 7.4 HOW WILL THE EFFECTS BE MANAGED?

A number of mitigation and management measures have been included to avoid or reduce impacts on birds:

- Careful siting of turbines and infrastructure to avoid known nesting sites and important habitats;
- Bird protection plans, including pre-construction checks and exclusion zones around active nests;
- Habitat Management Plan, which will improve or restore bird habitats in other parts of the Site, in particular providing new habitat for black grouse;
- Construction timing to avoid the most sensitive breeding periods where possible; and
- Regular monitoring to track bird activity and ensure that mitigation remains effective.

Where residual risk to key species remained (particularly golden eagle and black-throated diver), detailed analysis was undertaken to assess the likelihood and significance of any effects.

### 7.5 WHAT ARE THE OVERALL EFFECTS?

The assessment found that:

- No significant effects are predicted for any bird species or designated conservation sites;
- Golden eagle activity was recorded at low levels and well below collision risk thresholds;
- Black-throated diver and other diver species were not recorded using waterbodies near the turbines;
- Other species of conservation concern (such as curlew and hen harrier) were recorded in low numbers and are not expected to experience significant disturbance or loss of habitat; and
- No cumulative effects of concern were identified when considering other wind farms in the area.

In summary, through appropriate siting, mitigation, and habitat management, the Development is not predicted to result in significant effects on ornithology, either on its own or in combination with other projects.

# 8 ARCHAEOLOGY AND CULTURAL HERITAGE

### 8.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report considers the potential for the Development to affect archaeological remains and cultural heritage features. It assesses both the risk of disturbing buried archaeology during construction and the potential for turbines to affect the setting of historic buildings and landscapes.

The assessment is based on a Historic Environment Desk-Based Assessment (HEDBA) (provided in the EIA Report as Technical Appendix A8.1), consultation with The Highland Council and site walkovers.

### 8.2 WHAT FEATURES MIGHT BE AFFECTED?

There are no designated heritage assets within the Site boundary. However, within a wider 15 km study area, the following cultural heritage features were reviewed:

- Scheduled monuments including military roads, fortified farmsteads, and prehistoric sites;
- Listed buildings, including Greenfield Farm, a Category C listed barn;
- One designated Battlefield site (Blar na Lèine); and
- Other non-designated archaeological features nearby.

Although the Site contains no recorded archaeological features, it lies in an area historically used for grazing and near former post-medieval settlements. This means there is a low potential for unknown buried remains to exist within the Site boundary.

The key receptor considered for setting effects is Greenfield Farm (LB50834), a listed 18th-century barn located approximately 3.5 km south of the Site.

### 8.3 WHAT ARE THE POTENTIAL EFFECTS?

The main potential effects identified are:

- Construction-phase ground disturbance could affect unknown buried archaeology, such as field systems or historical remains from the post-medieval period;
- Operational-phase setting impacts on designated heritage features, such as views to and from listed buildings or scheduled monuments; and
- No direct effects are expected on any known archaeological site or designated cultural heritage feature.

Greenfield Farm was assessed in detail due to its potential long-distance views to the Site. However, it was concluded that its setting is primarily defined by the surrounding farm complex and not wider upland views. No other designated heritage assets were found to be significantly affected.

### 8.4 HOW WILL THE EFFECTS BE MANAGED?

To address the low potential for unknown archaeology, a phased programme of archaeological works is proposed, including:

- Watching briefs during site investigations; and
- Preservation by record or in situ, depending on what is found.

These measures will be agreed with The Highland Council and secured via planning condition.

No specific mitigation is required for cultural heritage setting, as no significant setting effects are predicted.

### 8.5 WHAT ARE THE OVERALL EFFECTS?

The assessment found that:

- There are no significant effects predicted on any cultural heritage assets;
- The potential for unknown buried archaeology is considered low, and if present, would be managed through appropriate archaeological mitigation;
- The setting of Greenfield Farm will not be significantly altered by the Development; and
- No cumulative effects on cultural heritage were identified when considered alongside other nearby developments.

Overall, the Development is not expected to have a significant impact on archaeology or the cultural heritage of the area.

## 9 NOISE

### 9.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report assesses the potential effects of Development on nearby properties from noise during construction, operation, and eventual decommissioning. The assessment follows national guidance, including the ETSU-R-97 method recommended by the UK Government and the associated Good Practice Guide (GPG).

### 9.2 WHAT FEATURES MIGHT BE AFFECTED?

Noise-sensitive properties, such as homes in the surrounding area, could be affected by temporary construction noise or by operational turbine noise once the wind farm is running. The closest assessed properties include:

- 1 and 2 Achadh-Luachraich;

- Ardochy House;
- Caledonian Cabin; and
- Daingean.

These receptors were chosen as representative of other homes in the area.

### 9.3 WHAT ARE THE POTENTIAL EFFECTS?

The potential effects of the Development on noise include:

- Temporary construction noise from machinery and vehicles, including HGV deliveries;
- Operational turbine noise during wind farm operation;
- Cumulative noise impacts, where turbines from other wind farms may also be audible; and
- Noise during decommissioning, similar in nature to construction.

During the operation of the wind farm, turbines can produce noise from the movement of blades and internal machinery. The assessment modelled turbine noise using conservative assumptions and considered both daytime and night-time periods.

### 9.4 HOW WILL THE EFFECTS BE MANAGED?

A number of measures will be used to manage and reduce noise:

- Best Practice construction methods, including limited working hours, careful equipment use, and noise suppression techniques;
- Operational noise limits will be set through planning conditions and enforced at nearby properties;
- Noise mitigation through turbine control, using quieter modes during certain wind speeds and directions if needed; and
- Ongoing compliance will be ensured through turbine management and condition monitoring.

The assessment found that without mitigation, one locations might exceed noise limits under certain conditions, unless it becomes financially involved in the Development (in which case different noise limits would apply). A mitigation strategy has been developed using reduced-noise turbine modes at specific times and wind directions to ensure full compliance.

### 9.5 WHAT ARE THE OVERALL EFFECTS?

The assessment concluded that:

- Construction noise effects are not significant, due to the distance between turbines and homes and the temporary nature of the works;
- Operational noise levels will be within acceptable limits at all times when mitigation is applied;
- Cumulative noise from nearby wind farms has been considered and addressed using reduced apportioned limits for the Development;
- No significant noise effects are expected during decommissioning, provided best practice measures are followed. Any legislation, guidance or best practice relevant at the time of decommissioning would be complied with.

In summary, with appropriate mitigation in place, the Development will meet all relevant noise standards. As a result, the effects of the Development in terms of noise are not considered significant under the EIA Regulations.

## 10 CLIMATE CHANGE

### 10.1 INTRODUCTION TO CHAPTER

This chapter considers both the potential vulnerability of the Development to climate change and its influence on greenhouse gas (GHG) emissions contributing to climate change. The assessment evaluates whether future changes in climate, such as variations in wind speed, precipitation and temperature, could affect the operation of the Development, and how the generation of renewable electricity from the project would help reduce overall carbon emissions compared to fossil fuel-based energy generation.

The assessment uses the Scottish Government's Carbon Calculator to estimate carbon savings and losses over the 40-year operational lifetime of the Development.

## 10.2 WHAT FEATURES MIGHT BE AFFECTED?

The assessment considered several climate-related factors that could influence the wind farm, such as wind speeds, temperature, and rainfall patterns. Changes in these areas can impact turbine efficiency, the potential for blade icing, and flood risk.

The climate is affected by emissions of greenhouse gases, including carbon dioxide, as a result of human activity.

Peatland habitats within the Site are also relevant, as their disturbance can release stored carbon into the atmosphere, potentially reducing the net carbon benefit of the project.

## 10.3 WHAT ARE THE POTENTIAL EFFECTS?

### 10.3.1 Effects of Climate on the Development:

Projected changes in climate over the 40-year life of the Development include slightly warmer temperatures, wetter winters, drier summers and potential increases in extreme weather events. However, evidence shows no significant long-term trend in damaging wind speeds or storms in the region. The turbines are designed to withstand high winds, extreme weather and icing events. The overall effect of climate change on the safe and efficient operation of the Development is predicted to be negligible.

### 10.3.2 Effects of the Development on Climate:

Wind energy generation displaces electricity that would otherwise be produced from fossil fuel sources. The Development is expected to produce around 383,000 megawatt-hours (MWh) of clean electricity each year, equivalent to avoiding approximately 167,580 tonnes of carbon dioxide emissions annually compared to fossil fuel generation.

There are carbon costs associated with constructing and maintaining the wind farm, including manufacturing turbines, transport, site works, and disturbance of peat soils. The assessment estimates these costs at 240,644 tonnes of carbon dioxide over the project's life. However, the carbon savings from renewable energy generation greatly outweigh these costs.

The carbon payback period, the time required for the wind farm to offset its own carbon footprint, is estimated to be 1.4 years compared to fossil fuel-based energy production. After this time, the project will continue to deliver net carbon benefits for the remainder of its operational life.

## 10.4 HOW WILL THE EFFECTS BE MANAGED?

The design process has minimised carbon losses by:

- Avoiding deep peat areas where possible, reducing peat excavation and associated emissions;
- Incorporating floating track construction methods in sensitive areas;
- Reusing excavated peat for site restoration to maintain carbon storage;
- Implementing a Construction Environmental Management Plan (CEMP) and Peat Management Plan (PMP) to control soil disturbance, runoff and carbon release; and
- Including watercourse buffers and best practice drainage design to minimise flood risk to infrastructure.

These embedded mitigation measures ensure that the Development achieves the shortest possible carbon payback period and maximises its long-term carbon savings.

## 10.5 WHAT ARE THE OVERALL EFFECTS?

The assessment concludes that:

- The Development is not vulnerable to significant adverse effects from predicted climate change over its lifetime;

- The project will deliver major beneficial effects for the climate by displacing fossil fuel electricity generation and significantly reducing greenhouse gas emissions;
- The carbon payback period is short, after which the project provides decades of net carbon savings; and
- In combination with other renewable energy projects, the Development will make a significant positive contribution to Scotland's and the UK's climate change targets.

In conclusion, the wind farm will have a significant beneficial effect on climate change mitigation and aligns well with national targets to reduce emissions and transition to a net-zero energy system.

# 11 TRAFFIC AND TRANSPORT

## 11.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report assesses the potential effects of the construction, operation and decommissioning of the Development on the local road network, including effects on road users, road safety, and sensitive communities. The assessment was carried out by qualified transport consultants and follows best practice and guidance from the Institute of Environmental Management and Assessment (IEMA).

The assessment focuses on traffic associated with the construction phase, as operation phase traffic levels are expected to be minimal, and decommissioning phase traffic would be similar to, but less than, construction phase traffic.

## 11.2 WHAT FEATURES MIGHT BE AFFECTED?

The Site is located near the A87 trunk road, south of the junction with the A887, with the nearest villages being Invermoriston and Invergarry. The main access will be from the A87, near Loch Loyne and approximately 4.1 km south of the Moriston Bridge, which is at the junction of the A87 and the A887.

The roads assessed in the study area include:

- A87(T): From Kyle of Lochalsh to Invergarry, including the new site access;
- A887(T): Linking Invermoriston with the A87; and
- A82(T): North and south of Invergarry and Invermoriston, forming the main regional route between Fort William and Inverness.

Sensitive receptors include the local communities of Invermoriston and Invergarry, nearby schools, pedestrian routes, and sections of road with a history of accidents.

## 11.3 WHAT ARE THE POTENTIAL EFFECTS?

The construction of the Development will involve a temporary increase in vehicle movements on local roads, including:

- Heavy Goods Vehicles (HGVs) bringing stone, concrete, turbine components, and general materials to Site;
- Abnormal loads, including long turbine blades and towers delivered via the A87 from Kyle of Lochalsh or Corpach; and
- Construction staff vehicles, mainly cars and minibuses.

The worst-case month during construction could see up to 329 HGV movements per day, although over 70% of this figure relates to stone delivery which could be significantly reduced if on-site borrow pits are used as intended.

Temporary increases in traffic may result in:

- Severance of communities, particularly in Invermoriston and Invergarry;
- Driver and pedestrian delays near the site access and within villages;
- Reduced amenity for non-motorised users (walkers, cyclists);
- Increased risk of accidents, though the road network is generally of good standard; and
- Minor cumulative effects, if other wind farms in the area are built at the same time.

Operation of the Development will require only limited maintenance visits (e.g., one vehicle per week), and decommissioning traffic is expected to be significantly lower than construction.

### 11.4 HOW WILL THE EFFECTS BE MANAGED?

To manage and minimise traffic impacts, a detailed Construction Traffic Management Plan (CTMP) will be developed in consultation with The Highland Council and Transport Scotland. The CTMP will include:

- Use of agreed delivery routes, avoiding narrow roads or sensitive areas;
- Delivery scheduling, to avoid peak travel times and school drop-off periods;
- Driver behaviour monitoring, including speed management;
- Wheel washing and road cleaning, to avoid mud and debris;
- Signage and resident communication, to increase awareness and reduce risk; and
- Coordination with other wind farm developers, to avoid overlap in peak traffic periods.

These measures will ensure that the effects of construction traffic are reduced to the lowest practical level.

### 11.5 WHAT ARE THE OVERALL EFFECTS?

The assessment found that:

- Significant increases in traffic may occur during construction, particularly on the A887(T) and A87(T), due to low baseline traffic levels;
- Effects are temporary and limited to the 18-month construction period;
- With implementation of a Construction Traffic Management Plan, all effects are expected to be minor and not significant in terms of the EIA Regulations;
- No significant effects are predicted during operation or decommissioning; and
- Cumulative effects with other developments are unlikely to occur at the same time and will be managed through coordination of traffic management plans.

In conclusion, with appropriate mitigation, the impact of traffic associated with Development is not considered significant.

# 12 HYDROLOGY, HYDROGEOLOGY AND SOILS

### 12.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report assesses how the Development might affect surface water, groundwater and soils (including peat) during construction, operation and decommissioning. It identifies sensitive water features such as rivers, lochs, peatlands and water supplies, and outlines the measures in place to avoid or reduce effects.

The assessment has been carried out by a qualified water specialist and is informed by extensive site surveys and desk-based analysis. It also considers feedback from statutory consultees including SEPA and The Highland Council.

### 12.2 WHAT FEATURES MIGHT BE AFFECTED?

The Site lies within the catchments of the River Garry, River Loyne and River Moriston, which ultimately feed into the River Ness. Key features include:

- Numerous small burns (e.g. Allt a' Bhiora, Allt Daingean);
- Peatland areas and near-surface water flows;
- Designated water-dependent sites such as:
  - River Moriston Special Area of Conservation (SAC) (supports salmon and freshwater pearl mussel);
  - West Inverness-shire Lochs Site of Special Scientific Interest (SSSI);
- No private water supplies are located within 1 km of the Site; and
- The nearest public water supply source (Loch Ness) is over 13 km away.

The Site contains areas of peat, with depth surveys showing the majority of peat is shallow (<0.5 m), although localised deeper pockets (typically 1-3 m) exist. The layout has been

designed to minimise impact on these areas. An assessment of whether there are habitats at the site that depend on groundwater concluded that none were present.

### 12.3 WHAT ARE THE POTENTIAL EFFECTS?

The main potential effects considered include:

- Pollution of watercourses or groundwater from fuels, concrete, or other materials;
- Sediment runoff from disturbed soils entering burns and lochs;
- Disruption to natural drainage due to tracks or turbine foundations;
- Changes to flood risk through increased runoff;
- Disturbance of peat leading to instability or loss of stored carbon; and
- Cumulative effects with other nearby wind farms during construction.

While these risks exist, extensive embedded design measures are in place to prevent impacts occurring.

### 12.4 HOW WILL THE EFFECTS BE MANAGED?

The following measures are included as part of the Development and will be secured through planning conditions:

- A comprehensive Construction Environmental Management Plan (CEMP) to control runoff, pollution and erosion;
- Buffers of at least 50 m between infrastructure and watercourses, except at designated crossings;
- Sustainable Drainage Systems (SuDS) at the Battery Energy Storage System (BESS) and other key infrastructure;
- Floating roads and careful siting to avoid deep peat where possible;
- A Peat Management Plan to ensure safe excavation, reuse, and storage;
- Oversized, climate-resilient watercourse crossings designed to withstand extreme flows;
- Fire and spill prevention measures for battery and fuel storage; and
- No use of water from private supplies, and public supplies are sufficiently distant to avoid any impact.

Monitoring and adaptive management will be undertaken through the construction and operational phases.

### 12.5 WHAT ARE THE OVERALL EFFECTS?

The assessment concludes that:

- No significant effects are expected on watercourses, lochs, groundwater or designated sites;
- Flood risk will not increase, and no infrastructure lies within known floodplains;
- Peat disturbance has been minimised, and the small pockets of deeper peat are avoided where feasible; and
- Cumulative effects with other nearby wind farms (e.g. Bunloinn and Tomchrasky) are unlikely as construction timelines are not expected to overlap.

In summary, with good design and robust control measures in place, the Development is not predicted to result in any significant effects on hydrology, hydrogeology or soils.

## 13 SOCIO-ECONOMICS, LAND USE, RECREATION AND TOURISM

### 13.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report assesses how the Development may affect local and regional socio-economic conditions, land use, tourism and recreational amenity. It considers the likely effects during construction, operation and decommissioning, and also identifies any long-term opportunities or impacts on businesses, access, or community wellbeing.

The chapter is based on published data, national and regional policy, and relevant guidance. It also draws on local consultation responses and public data sources. No significant long-term effects are predicted, and some temporary benefits to employment and local expenditure are anticipated.

## 13.2 WHAT FEATURES MIGHT BE AFFECTED?

The Site lies in a rural upland area used primarily for deer stalking, with limited public access and few formal recreational routes on-site. However, the surrounding area includes recognised recreational trails, informal access under the Land Reform (Scotland) Act, and a small number of tourism-related businesses, including self-catering accommodation and a fishing facility on Loch Garry.

Within 5 km of the Site, there are several core paths and local walking routes, such as the Meall Dubh Trail and the Mandally to Poulary section of the Scottish National Trail. The wider Highland region is a key tourism destination, with attractions such as Loch Ness, Urquhart Castle and Ben Nevis drawing both domestic and international visitors.

The Site is within the Highland Council area, where tourism accounts for a higher proportion of employment than the Scottish average. Local accommodation is typically small-scale and scattered, and public access to the Site is possible but not widespread.

## 13.3 WHAT ARE THE POTENTIAL EFFECTS?

During construction, the Development will result in a short-term increase in local employment opportunities and spending. Around 30 temporary jobs are expected during the 18-month construction period, with associated spending on accommodation, services and local supply chains. Additional indirect benefits may arise from contract opportunities for local firms.

There will also be some minor and temporary disruption to land use, as deer stalking activity is likely to be suspended during construction for safety reasons. Recreational access across the Site may also be temporarily restricted in certain areas while works are underway, with appropriate signage and management in place.

During operation, the Development will require a small maintenance workforce, generating limited but ongoing employment. The new access tracks may enhance recreational access in the long term. Tourism and recreation receptors are not expected to experience any significant disruption or change in amenity, particularly as existing wind farms are already part of the local landscape.

Visual effects for visitors using nearby trails or accommodation may be noticeable but are not predicted to be significant. No evidence was found to suggest that wind farm developments lead to a decline in tourism visits. Studies across Scotland indicate that visitor numbers have continued to rise in areas with existing wind farms.

During decommissioning, effects are expected to be similar in nature and scale to construction but of short duration.

## 13.4 HOW WILL THE EFFECTS BE MANAGED?

The Development includes several measures to manage and minimise socio-economic and recreational effects:

- An Access Management Plan will be implemented to maintain and guide public access during construction;
- Construction traffic and deliveries will be carefully managed under a Construction Traffic Management Plan, minimising disruption to nearby roads and communities;
- Local contractors will be encouraged to tender for construction and maintenance services, maximising regional economic benefit;
- A Community Benefit Fund will be established, supporting local initiatives and services. The developer is also exploring opportunities for shared ownership with community groups; and
- During operation, the new track network may improve informal recreational access to parts of the Site.

No significant mitigation is required for tourism or accommodation effects, as these are considered negligible.

### 13.5 WHAT ARE THE OVERALL EFFECTS?

The overall socio-economic effect of the Development is considered to be minor and beneficial, particularly at a local level during construction. There will be modest increases in local employment, business opportunities, and expenditure, though these effects are not significant in EIA terms.

The land will remain in use for deer stalking outside the construction period, and the overall land-take is less than 3% of the total Site area. Long-term land use will therefore be largely unchanged, with the addition of renewable energy generation enhancing its productive value.

No significant adverse effects on tourism or recreational routes are predicted. Views from walking trails or accommodation may include the turbines, but the change will be minor in context, and the area already contains several operational wind farms.

In summary, the Development is expected to result in minor beneficial effects on socio-economic conditions, negligible effects on tourism, and no significant impacts on land use or recreational access.

## 14 OTHER ISSUES INCLUDING AVIATION, TELECOMS, WASTE, AND MAJOR ACCIDENTS AND DISASTERS

### 14.1 INTRODUCTION TO CHAPTER

This chapter of the EIA Report considers potential effects on environmental topics not covered in other chapters. These include aviation, telecommunications, waste, major accidents and disasters (including battery safety), and transboundary effects. The assessment draws on supporting technical appendices and consultation feedback received at the Scoping stage. Each of these topics has been reviewed in relation to the location, scale, and design of the Development, with appropriate mitigation considered where relevant.

### 14.2 AVIATION

From an aviation point of view, the Site is located in airspace that is open and unrestricted from a civilian aviation perspective. From a military perspective, the Site lies within areas commonly used for low-level RAF and NATO flight training. As the wind turbines will exceed 150 metres in height, aviation lighting is required to comply with the UK Air Navigation Order and Ministry of Defence (MOD) standards.

An aviation lighting scheme has been proposed to the Civil Aviation Authority (CAA). This includes visible red lights on nine of the 19 turbines to meet CAA requirements, and infrared (IR) lights on all turbines to ensure visibility for aircraft using night vision equipment. No mid-tower lights are proposed, helping reduce visual impact at night.

The visible lighting system will include a dimming function to reduce intensity in clear visibility conditions, minimising impacts on landscape and visual receptors while maintaining flight safety. The proposed scheme is consistent with common practice and has been deemed acceptable by aviation consultees during Scoping. Final turbine locations and lighting specifications will be submitted post-consent to ensure accurate aviation charting and compliance.

In conclusion, the Development has considered all relevant aviation issues and incorporates a lighting scheme that ensures operational safety without giving rise to significant effects.

### 14.3 TELECOMMUNICATIONS

Consultation with telecommunication providers was undertaken during the Scoping stage, and no concerns were raised. As the final turbine layout is smaller in extent than originally proposed, and given the lack of identified risks to transmission paths or masts, no impacts on telecommunications infrastructure are anticipated. As such, no further mitigation is required.

### 14.4 WASTE

Waste management has been addressed for all phases of the Development, including construction, operation and decommissioning. No significant quantities of waste are anticipated.

During construction, materials such as stone and soil will be reused on site for landscaping, road building and restoration, and will not be classified as waste. Minor waste streams will include packaging, sanitary waste, timber supports, and small volumes of plastics. A Site Waste Management Plan (SWMP) will be implemented to ensure all waste is handled, stored, and disposed of in accordance with relevant regulations. Hazardous materials such as used oil or fuel will be removed from site by a licensed contractor.

During operation, waste generation will be minimal and primarily limited to occasional maintenance activities. This may include welfare waste, packaging from replacement parts, and general office or storage waste. Sanitary waste will be managed through sealed tanks or cesspits, emptied as needed by an approved provider.

At decommissioning, above-ground infrastructure will be dismantled and recycled where possible. Any non-recyclable materials will be disposed of in line with future waste legislation. The approach to waste management complies with all applicable Scottish Government and SEPA guidance and is not expected to give rise to significant effects.

### 14.5 MAJOR ACCIDENTS AND DISASTERS

The EIA has considered potential risks arising from accidents or disasters during construction or operation of the wind farm. Construction risks such as traffic collisions, spillages or pollution are addressed in earlier chapters. Measures to avoid such risks include adherence to construction best practice, implementation of a Construction Environmental Management Plan (CEMP), and clear protocols for site health and safety.

Of particular note is the inclusion of a Battery Energy Storage System (BESS) within the Development. Battery systems carry some inherent risks, including overheating or, in rare cases, fire. To address this, the Development includes an Outline Battery Safety Management Plan (BSMP), with a full version to be developed in consultation with the Scottish Fire and Rescue Service prior to construction.

The BESS is sited over 2 km from the nearest residential property and away from sensitive receptors. Modern battery systems are subject to rigorous regulatory standards and will include fire suppression, spacing between units, and secondary containment measures to reduce fire risk and manage any run-off. Based on this approach, the likelihood and consequence of a major battery-related incident are both low, and the associated risk is not considered significant.

### 14.6 TRANSBOUNDARY EFFECTS

Under the EIA Regulations, transboundary effects refer to impacts that could affect another country. The nearest European Union Member State is the Republic of Ireland, and due to the location and nature of the Development, no transboundary effects are anticipated.

## 15 SUMMARY OF MITIGATION

Chapter 15 of the EIA Report summarises the mitigation and control measures that are proposed elsewhere in the EIA Report, to assist decision-makers in securing this mitigation by applying suitably worded planning conditions to the consent.