



Loch Liath Wind Farm EIA Report

April 2023

Non-Technical Summary



Statkraft

Loch Liath Wind Farm
Environmental Impact Assessment (EIA) Report
Non-Technical Summary

Prepared by

LUC

on behalf of

Loch Liath Wind Farm Limited

April 2023



Preface

This Environmental Impact Assessment (EIA) Report has been prepared in support of an application by Loch Liath Wind Farm Limited (Ltd) (a company wholly owned by Statkraft UK Limited) ('the Applicant') to the Scottish Government Energy Consents Unit (ECU) for Section 36 consent to construct and operate Loch Liath Wind Farm ('the Proposed Development') in The Highland Council (THC) administrative area. The Proposed Development is located within the Balmacaan Estate, directly west of the Great Glen and Loch Ness, and with the closest turbine being located approximately 13 kilometres (km) south-west of Drumnadrochit. The Proposed Development will comprise up to 13 wind turbines and other associated infrastructure.

The EIA Report comprises the following volumes:

- Volume 1: Written Text;
- Volume 2: Figures;
- Volume 3 (a): NatureScot Visualisations (Viewpoints 1-10);
- Volume 3 (b): NatureScot Visualisations (Viewpoints 11-20 and AESLQ & WLA Assessment Points);
- Volume 4 (a): Highland Council Visualisations (Viewpoints 1-10);
- Volume 4 (b): Highland Councils Visualisations (Viewpoints 11-20);
- Volume 5 (a): Appendices 1.1-8.5; and
- Volume 5 (b): Appendices 9.1-14.2.

In addition to the above, the application is accompanied by a standalone Non-Technical Summary (NTS) (This Document), a Planning Statement, a Design and Access Statement and a Pre-Application Consultation (PAC) Report.

A hard copy of the EIA Report will be available for public viewing during the application consultation period at the following address:

Glenurquhart Library and Learning Centre

Drumnadrochit

Inverness

IV63 6XA.

Copies of this EIA Report and further information may be obtained by contacting Loch Liath Wind Farm Ltd on 0800 772 0668 or by emailing uk-post@statkraft.com. A hard copy of the EIA Report is available for £2500. Hard copies of the Non-Technical Summary (NTS) are available free of charge.

The documents will also be available for viewing online on the Scottish Government ECU planning portal (<https://www.energyconsents.scot/ApplicationSearch.aspx>), THC planning portal <https://wam.highland.gov.uk/wam/> and on the application website www.lochliath.co.uk.

Any public representations to the application may be submitted via the ECU website at www.energyconsents.scot/Register.aspx; by email to the Scottish Government, Energy Consents Unit mailbox at representations@gov.scot; or by post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds for representation. The Applicant will advertise the submission of the Section 36 application in the local and national press and on the dedicated project website. The advert will state the deadline for submitting representations to Scottish Ministers.

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Image 1: Photomontage of the Proposed Development from Carn na Saobhaidhe (LVIA Viewpoint 17)

Introduction

Introduction

1.1 This document is a Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report which accompanies an application for development consent made by Loch Liath Wind Farm Limited (a company wholly owned by Statkraft UK Limited, hereafter referred to as 'the Applicant'). The NTS summarises the key findings of the EIA which has been undertaken by LUC and technical specialist consultants on behalf of the Applicant to assess the effects of the construction and operation of Loch Liath Wind Farm (hereafter referred to as 'the Proposed Development').

1.2 The Proposed Development is predominantly located within the Balmacaan Estate, west of the Great Glen and Loch Ness, within The Highland Council (THC) administrative area. The location of the Proposed Development is shown in **Figure 1**.

1.3 The Proposed Development will comprise up to 13 turbines, with ten having a maximum blade tip height of up to 200 metres (m) and three having a maximum blade tip height of up to 180m.

1.4 As the Proposed Development will have an installed capacity of over 50 megawatts (MW), consent is required from the Scottish Ministers (via the Energy Consents Unit (ECU)) in consultation with consultees including THC¹. The consenting process for energy generation projects over 50 MW is set out under Section 36 of the Electricity Act 1989. As part of this Section 36 application, deemed planning permission will also be requested under Section 57 of the Town and Country Planning (Scotland) Act 1997 (as amended) to construct and operate the Proposed Development.

The Applicant

1.5 The application will be made by Loch Liath Wind Farm Limited (a wholly owned subsidiary of Statkraft UK Limited). Statkraft is a leading company in hydropower internationally and is Europe's largest generator of renewable energy. The

Group produces hydropower, wind power, solar power, gas-fired power and supplies district heating. Statkraft is a global company in energy market operations and has 5,300 employees in 21 countries.

1.6 Statkraft is at the heart of the UK energy transition. Since 2006, Statkraft has gone from strength to strength in the UK, building experience across wind, solar, hydro, storage, grid stability, EV charging, green hydrogen and a thriving markets business. Statkraft has invested over £1.3 billion in the UK's renewable energy infrastructure and facilitated over 4 gigawatts (GW) of new-build renewable energy generation through Power Purchase Agreements (PPA). In the UK Statkraft employs over 450 staff in England, Scotland, and Wales, and plays a key role in helping the global business reach its goal of 9GW of developed wind and solar power by 2025.

Environmental Impact Assessment (EIA)

1.7 An EIA is carried out where a proposed development has the potential to result in significant environmental effects. As it is considered possible that the Proposed Development may result in significant environmental effects, an EIA has been undertaken to accompany the application for Section 36 consent.

1.8 EIA involves the compilation, evaluation and presentation of any likely significant environmental effects resulting from a proposed development, to assist the consenting authority, statutory consultees, and wider public in considering an application.

1.9 EIA is an iterative process whereby the identification and assessment of effects can also inform the design of a proposed development so that potentially significant adverse environmental effects can be avoided, reduced and, if possible, removed at an early stage. A proposed development can then be refined to avoid or reduce potential environmental

¹ THC will not be the determining authority, but its inputs will be key to the decision-making process.

effects, where necessary, through the use of mitigation measures.

1.10 The EIA Report presents information on the identification and assessment of the likely significant environmental effects resulting from the Proposed Development across a number of environmental topics. The significance of these effects has been assessed using criteria defined in the topic chapters of the EIA Report. Where appropriate, or as otherwise defined, the significance of effects has been categorised as major, moderate, minor or negligible. In the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as the 'EIA Regulations') likely effects assessed as being of 'major' or 'moderate' significance are considered to be significant effects.

1.11 The scope of the EIA was informed by the Scoping Opinion provided by the Scottish Government ECU on 30th April 2021, and included comments from a number of consultees, including THC and NatureScot.

1.12 As required by the EIA Regulations, the EIA Report has been prepared by 'competent experts' in relevant specialisms.

Overview of the Site and the Proposed Development

The Site

1.13 The Site is located in an upland area to the west of the Great Glen and Loch Ness within THC administrative area. Settlements nearby are generally located within the glens, with the closest settlements to the Site comprising Invermoriston (approximately 7 kilometres (km) to the south of the closest turbine), Balnain (approximately 8.5km to the north of the closest turbine) and Drumnadrochit (approximately 13km north-east of the closest turbine). A number of small clusters of residential properties are also found scattered along the glens to the north, east, south and north-west.

1.14 The area where the turbines are currently proposed to be sited comprises an undulating upland moorland plateau with rocky outcrops and upland lochans. There are numerous steep-sided rock hills within the Site and outside of the site boundary, including Meall Fuar-mhonaidh (which is 699m Above Ordnance Datum (AOD) and located approximately 7km east of the closest turbine).

1.15 There is mixed woodland and coniferous forestry adjacent to the northern boundary of the Site and adjacent to the access track. There is no forestry located within the Site.

1.16 The Site has a number of waterbodies and small watercourses that drain into larger rivers outside of the Site, including the River Enrick. Loch Ness receives all the water that drains from the Site. Loch Ness drains north to the River Ness before entering the North Sea at Inverness.

1.17 There are four key transportation routes located near the Site which include:

- The A831 passing through Glen Urquhart which is over 5km to the north of the closest turbine;
- The A887 to the south, from where the access to the Site will be taken;
- The A82 running alongside the western shore of Loch Ness within the Great Glen approximately 6.1km to the east of the nearest turbine; and
- The B862, which follows the eastern shore of Loch Ness approximately 10.9km to the east of the closest turbine.

1.18 While there are no Core Paths or National Cycle Routes within the Site or its immediate vicinity, there is a small section of route H117 is located along the proposed access to the Proposed Development and this is identified as an "other route" and is not designated as a Right of Way or Core Path.



Image 2: Photomontage of the Proposed Development from B862 Suidhe Viewpoint (LVIA Viewpoint 8)

2. Development Description

The Proposed Development

2.1 The main components of the Proposed Development will comprise the following, as shown in **Figure 2**:

- Up to 13 wind turbines (three will have a maximum blade tip height of up to 180m and ten will have a maximum blade tip height of up to 200m);
- It is proposed that six of the turbines will be fitted with visible aviation warning lights;
- Foundations supporting each wind turbine;
- Associated crane hardstandings and adjacent laydown areas at each turbine location;
- Approximately 9.3km of new access tracks which includes 8.2km standard track and 1.1km of floating track;
- A total of nine new watercourse crossings, seven crossings over small drains (16 crossings in total) and associated infrastructure, i.e., culverts;
- Network of onsite underground electrical cables and cable trenches to connect the turbines to the onsite substation;
- One permanent steel lattice anemometer mast of up to 122.5m in height;
- Vehicle turning heads;
- Onsite passing places (final location and specification to be determined by the turbine supplier);
- Site signage;
- A permanent compound containing the onsite substation and control building; and
- An Outline Restoration and Enhancement Plan (OREP) for peat, biodiversity, forestry and landscape.

2.2 In addition to the above components of the operational Proposed Development, construction of the Proposed Development will also require the following components:

- One temporary compound;
- Creation of one temporary borrow pit for the extraction of stone;
- A concrete batching area (location to be confirmed however this will be within the existing infrastructure area identified e.g. in the borrow pit or construction compound as identified by the Contractor and agreed in the Construction and Environmental Management plan [CEMP]); and
- Whilst no widening of the existing Bhlaraidh Wind Farm access from the A887 is required, it may be necessary to improve the running surface prior to use and to scrape of the top layer of material to facilitate delivery of the turbine components.

2.3 It is anticipated that construction of the Proposed Development will commence in 2027.

Access

2.4 Access to the Site will be via the A887, before following the existing Bhlaraidh Wind Farm track until reaching the Site entrance (**Figure 3**). A Construction Traffic Management Plan (CTMP) will be used to minimise disturbance of the Proposed Development on the local road networks.

2.5 There will be turning heads installed for abnormal loads vehicles which will be delivering the turbine components. This also includes access for Heavy Goods Vehicles (HGVs) which deliver the construction materials.

2.6 Appendix 12.1: Transport Assessment provides information on the proposed abnormal loads route to the Site.

Forestry

2.7 Areas of forestry are present to the north of the Site, and along the Bhlaraidh Wind Farm existing access track to the south. There is no woodland within the area where turbines and infrastructure are proposed, therefore, no felling of trees is required to facilitate the Proposed Development.

Aviation Lighting

2.8 In the interest of aviation safety and in accordance with aviation legislation/policy, night-time aviation lights will be installed on the hubs of six of the 13 turbines (T1, T4, T7, T10, T12 and T13). The hub houses the mechanical equipment, which is located at the top of the turbine.

2.9 Aviation lighting is important to be installed on any turbines that exceed 150m maximum blade tip height. The chosen turbines will be provided with 2000/200 candela (cd) lights at hub height to satisfy aviation legislation/policy.

2.10 Further details of the aviation lighting proposal can be found in **Appendix 14.2: Aviation Lighting and Mitigation Report** of the EIA report.

Lifespan of the Proposed Development

2.11 Subject to the granting of the consent, it is anticipated that the construction of the Proposed Development will last for up to 18 months. Consent is being requested to operate the Proposed Development for 35 years.

2.12 At the end of the 35-year operational period, the Proposed Development may be fully decommissioned, or an application may be made to extend its operational life. It is estimated that decommissioning would take approximately 12 months. This will involve the dismantling and removal of the wind turbines and electrical equipment, as well as restoring the turbine areas, hardstandings and tracks.

Embedded Mitigation Measures

2.13 Embedded mitigation measures comprising general good practice measures will be employed as standard techniques during the construction of the Proposed Development. Therefore, these measures are considered to be an integral part of the construction phase. This is considered a realistic scenario given the current regulatory context and accepted good practice across the construction industry.

2.14 These measures include:

- CEMP;
- Pollution prevention Plan (PPP);
- Construction Traffic Management Plan (CTMP); and
- Peat Management Plan (PMP).

2.15 Embedded mitigation can also include measures adapted as part of the design of the Proposed Development to

avoid the potential for significant effects on specific receptors. Where relevant, embedded mitigation measures, including those incorporated through the design process, are mentioned below.

Peat Management

2.16 Whilst the Proposed Development has been designed to minimise disturbance to peatland, it has not been possible to avoid areas of peatland entirely. Therefore, an Outline PMP has been produced which will ensure that excavated peat is appropriately managed and re-used onsite. It is anticipated that all excavated peat can be reused within the Site for reinstatement of ground or improving existing peatland areas elsewhere within the Site.

2.17 An Outline PMP is presented within **Appendix 7.3 Outline Peat Management Plan** of the EIA Report.

Benefits of the Proposed Development

Environmental Benefits

Carbon Balance

2.18 The purpose of the Proposed Development is to generate electricity from a renewable source of energy, offsetting the need for power generation from the combustion of fossil fuels. The Proposed Development will also contribute to the decarbonisations of heat and transport networks and ultimately contribute towards Scotland's net zero obligations. Consequently, the electricity that will be produced by the Proposed Development will result in a saving in emissions of carbon dioxide (CO₂) with associated environmental benefits.

It is calculated that the CO₂ emissions that will be emitted as part of the construction of the Proposed Development will be paid back within 2.4 years.

2.19 Following this period, the Proposed Development will, in effect, be in a net gain situation and will contribute to national objectives to reduce carbon emissions. Further details are provided in **Appendix 14.1: Carbon Balance Assessment**.

Habitat Management

2.20 An OREP is provided in **Appendix 8.5: Outline Restoration and Enhancement Plan** of the EIA Report. This outlines details of proposals which the Applicant is committed to implementing to provide biodiversity enhancements within the Site. The OREP will be developed through consultation with key stakeholders, further research, and will culminate in a more formal Restoration and Enhancement Plan to be implemented and monitored during the lifetime of the Proposed Development.

2.21 The OREP includes proposals for the restoration of peatland habitats, native and tree planting, montane scrub planting, grazing management, provision of diver rafts and

water vole monitoring. The proposals will provide ecological, ornithological and landscape benefits across the Site.

2.22 A detailed monitoring programme has also been developed, with annual monitoring being carried out through the lifespan of the Proposed Development.

The Outline Restoration and Enhancement Plan is expected to provide opportunities for substantial, interrelated environmental enhancements at the Loch Liath Wind Farm Site with respect to the peat resource, biodiversity, forestry and landscape.

Community Benefits

It is estimated that the number of households that could be powered by the Proposed Development is over 78,000 a year.

2.23 As well as contributions to the generation of low carbon electricity and the resulting offsetting of carbon emissions, the Proposed Development also provides the opportunity for local communities to benefit financially from its operation through annual contributions of £5,000 per MW installed per year for a Community Benefit Fund, as recommended by the Scottish Government Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments². The total amount of community benefit available will be determined by the actual installed capacity of the wind farm, should it be consented and constructed.

At this stage based on the candidate turbine, the wind farm will have a maximum installed capacity of 85.8MW, which would mean a maximum of £429,000 available for community benefit per annum (£5,000 per MW of installed capacity).

2.24 In addition, the Applicant is also committed to offering shared ownership of the Proposed Development to the community and supporting broadband provision within the community.

² <https://www.gov.scot/publications/scottish-government-good-practice-principles-community-benefits-onshore-renewable-energy-developments/documents/>



Image 3: Photomontage of the Proposed Development from Creag Dhubh, east of Glen Affric (LVIA Viewpoint 10)

3. Site Selection and Design Strategy

Site Selection

3.1 The Site was selected by the Applicant for a number of reasons, including the following:

- The Site has an excellent wind resource and is available for wind energy development;
- The Site is not covered by any international or national designations for landscape or nature conservation;
- There is no forestry within the Site and no felling is required;
- There are no key environmental constraints that would preclude development, or which cannot be avoided through design;
- The size of the Site allows for opportunities to explore and provide habitat management and enhancement, particularly for degraded peatland habitats thus also providing carbon sequestration benefits; further details are set out in the OREP;
- The closest turbines are located approximately 5km from the nearest residential receptors thereby avoiding unacceptable noise and residential visual amenity effects;
- The closest settlement with visibility of the Proposed Development is Balnain, at a distance of approximately 8.5km to the north and north-east of the closest turbine;
- The immediate surrounding landscape is, in part, defined by the existence of the operational Bhlaraidh Wind Farm to the south-west, and the consented Bhlaraidh Wind Farm Extension to the south;
- There are no planning policies which, in principle, preclude wind energy development on the Site;
- There is a feasible grid connection available, as advised by the network operator SSEN. The grid connection will be the subject of a separate application by SSEN; and

- The Site is accessible for construction traffic and turbine deliveries, and benefits from use of an existing access which serves the operation Bhlaraidh Wind Farm, and which will also be used for construction of the consented Bhlaraidh Wind Farm Extension. This has the benefit of substantially reducing the extent of new infrastructure required for the Proposed Development.

Design Process

3.2 The final design of the Proposed Development (see **Figure 2**) is the outcome of an iterative process which has aimed to balance achieving the maximum energy yield possible for the Site whilst also minimising potential effects on the environment.

3.3 The starting point for the design was to maximise the potential output from the Site, which was then subsequently informed by landscape and visual considerations, therefore considering landform, scale, land use (including cumulative wind farm context, particularly Bhlaraidh and Bhlaraidh Extension schemes) and key visual receptors. These factors influence how the Proposed Development will be perceived by people within the surrounding area, and to what extent the landscape is capable of accommodating the Proposed Development.

3.4 The layout of the Proposed Development evolved through a number of design iterations. The layout iterations took into account emerging survey findings, as well as the feedback received following consultation with the consultees and public to avoid or minimise likely significant environmental effects.

3.5 The main components of the Proposed Development considered in the initial design iterations were the turbines. The location of other infrastructure components was largely dictated by the positioning of the turbines, and were designed around onsite environmental constraints including:

- Key landscape and visual considerations in relation to the overall design strategy;
- Hydrology, including distance to watercourses (maintaining a 50m buffer where possible);

- Peat (avoiding deeper (>1m, and ideally >0.5m) peat where possible);
- Ornithology;
- Ecology (including avoidance of deeper areas of peat which generally correlate with more sensitive habitats);
- Cultural Heritage;
- Noise (including the presence of two bothies located within the wider landholding within which the Site is located; from an early stage a 1km buffer was applied to these bothies and they are no longer within the Site); and
- Engineering and construction considerations (including slope and terrain).

3.6 Further detail can be found in **Chapter 3: Site Selection and Design Strategy** of the EIA Report and the Design and Access Statement.



Image 4: Photomontage of the Proposed Development from Meall Mor, above Glen Affric (LVIA Viewpoint 9)

4. Landscape and Visual Amenity

Introduction

4.1 The landscape and visual impact assessment (LVIA) considered the potential effects of the Proposed Development on landscape and views of the Site from key viewpoints, surrounding routes, residential properties and settlements during construction and operation, in accordance with best practice guidance³. The cumulative LVIA included consideration of operational and under construction developments as well as those which have been consented or are currently subject of a valid planning application/application for consent.

Baseline Conditions

4.2 The Site is not within a designated landscape or wild land area. However, there are several designated landscapes and wild land areas within 15km of the Proposed Development, including the Glen Affric National Scenic Area (NSA), Glen Strathfarrar NSA, Loch Ness and Duntelchaig Special Landscape Area (SLA), Strathconon, Monor and Mullardoch SLA and the Central Highlands Wild Land Area (WLA).

4.3 There are a number of small settlements within 15km of the Proposed Development, and those with theoretical visibility of the Proposed Development include Balnain and Drumnadrochit.

4.4 Key transportation routes include the A831 and the A887 and the main recreational routes within 15km of the Proposed Development include the following routes:

- The Great Glen Way, 4.5km east of the nearest turbine;
- South Loch Ness Trail, 9.7km east of the nearest turbine;
- Affric Kintail Way, 3.6 km north of the nearest turbine; and

- The Caledonia Way cycle route passes 9.8 km east of the nearest turbine.

Embedded Mitigation

4.5 The mitigation of potential landscape and visual effects has been embedded through the design process. The Applicant has sought to minimise the potential effects through careful consideration of the composition of the Proposed Development in key views such as from Glen Urquhart, the summit of Meall Fuar-mhonaidh, the B862 Suidhe scenic viewpoint, and the Glen Affric NSA.

Assessment of Effects

Construction Effects

4.6 A number of significant effects have been identified during the construction period, including due to ground disturbance, the presence of tall cranes and the movement of plant and machinery. In the short term, these will typically be limited to the immediate vicinity from where activities may be perceptible. Over time, these will be replaced by the longer-term operational effects due to the introduction of the turbines as tall structures in the landscape.

4.7 Significant (Major) landscape and visual effects will occur for the Site during the construction of the Proposed Development due to ground disturbance, the presence of tall cranes and the movement of plant and machinery.

Operational Effects

Landscape

4.8 During operation, **Major** landscape and visual effects for the Site are likely to continue due to the introduction of the turbines as tall structures in the landscape.

4.9 In terms of Landscape Character Types (LCTs), **Moderate** effects are predicted for LCT 222: Rocky Moorland Plateau – Inverness – Inverness for a localised extent of the

³ Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.

LCT, reducing to not significant for the whole of the LCT. Beyond this, effects on other LCTs will not be significant.

Visual

4.10 Significant effects on views are predicted at 6 of the 20 representative viewpoints:

- Viewpoint 1: Affric Kintail Way, near Braefield (daytime) (**Moderate**);
- Viewpoint 2: Meall Fuar-mhonaigh (**Major**);
- Viewpoint 5: Coire Loch Trail, Glen Affric (**Moderate**);
- Viewpoint 8: B862 Suidhe Viewpoint (**Moderate**);
- Viewpoint 9: Meall Mor, above Glen Affric (**Moderate**); and
- Viewpoint 10: Creag Dhubh (daytime) (**Moderate**).

4.11 The settlement of Balnain is expected to experience **Moderate** visual effects at a local level, however, this effect reduces to minor for the settlement as a whole. Localised sections of the B862 near the Suidhe viewpoint are predicted to experience **Moderate** effects. The Affric Kintail Way is expected to experience **Moderate** effects near Braefield approximately 5.6km of the Proposed Development. The Caledonia Way cycle route and the South Loch Ness Trail experience **Moderate** effects near the promoted Suidhe viewpoint and along the eastern shore of Loch Ness within approximately 13-17 km of the Proposed Development. Rights of Way close to the Site will experience **Moderate** effects.

Designated Landscapes

4.12 **Moderate** effects are predicted in the Glen Affric NSA on a local level, as experienced by recreational receptors, however, this will not affect the NSA as whole. No other significant effects are expected in relation to landscape designations within the Study Area.

Cumulative Effects

4.13 The Cumulative Landscape and Visual Impact Assessment (CLVIA) has considered potential effects with other operational, under construction and consented wind farm schemes, as well as wind farms which are the subject of undetermined valid planning applications (including selected applications at Scoping stage as requested by consultees).

4.14 Overall, future additional cumulative effects (Scenario 1 and Scenario 2) are not judged to be of a greater significance than those of the primary Landscape and Visual Amenity Impact Assessment (LVIA). The Proposed Development's contribution to combined cumulative landscape and visual effects will be no greater than reported in the primary LVIA.

Mitigation Measures

4.15 The appearance of the Proposed Development in views from Glen Urquhart, Meall Fuar-mhonaigh, the B862 Suidhe

scenic viewpoint, and the Glen Affric NSA formed a key consideration in the design development.

4.16 Beyond embedded mitigation through design and reinstatement of disturbance associated with the construction of the Proposed Development, no additional mitigation measures have been identified that would materially reduce the level of effects assessed.

Residual Effects

4.17 The residual effects will remain as those outlined above for the operational phase of the Proposed Development.

Some landscape and visual effects are inevitable as a result of introducing a wind farm to the landscape. However, the Applicant has carefully designed the scheme to minimise significant effects from key viewpoints and sensitive locations where possible.

5. Geology, Hydrology, Hydrogeology and Peat

Introduction

5.1 The assessment considered the potential effects of the Proposed Development on geology, hydrology, hydrogeology and peat.

5.2 The assessment was undertaken based on the findings of field survey, consultation and desk-based data collection. This included detailed peat surveys, hydrological surveys, private water supply (PWS) surveys, Ground Water Dependent Terrestrial Ecosystem (GWDTE) surveys and a watercourse crossing assessment.

Baseline conditions

5.3 The majority of the Site drains northwards through a series of lochans to the Allt Seanabhaile watercourse. A small section of the Site drains east into the River Colitie Catchment and a small section drains south into the Allt Loch a' Chrathaich catchment. The Allt Seanabhaile and River Colities join the River Enrick and the Allt Loch a' Chrathaich joins the River Moriston before they both discharge into Loch Ness.

5.4 The River Moriston is a Special Area of Conservation (SAC) for Fresh Water Pearl Mussel and Atlantic Salmon and Loch Ness is used as a public drinking water supply.

5.5 No PWS were identified within 2km of the Proposed Development.

5.6 The main watercourses are generally of good quality and can support migratory fish where there are no obstructions present to prevent their migration. Loch a' Crathaigh, Loch nam Meur and Loch na Ruighe Duibhe had suitable habitats for migratory fish.

5.7 The geological conditions comprised of relatively impermeable bedrock overlain in places by peat deposits. Detailed peat surveys were undertaken to determine the depths and distribution of peat deposits across the Site.

5.8 No GWDTEs are present within 250m of the Proposed Development.

5.9 No significant areas of peat slide hazard risk were identified during the Peat Landslide Hazard Risk Assessment (PLHRA).

Embedded mitigation

5.10 Embedded mitigation measures include avoidance of deep peat, 50m buffers from watercourses and the treatment and attenuation of surface water runoff to minimise the risk of pollution and drainage issues. Details of embedded mitigation measures can be found in **Appendix 7.1: Best Practice Methods**, which outlines measures to be taken into account during the constructional and operational period to reduce the impact on hydrology, hydrogeology, geology and peat.



Image 5 Showing the River Colitie to the east of Loch Aslaich

5.11 Excavated peat will be appropriately re-used on the Site. The good quality excavated peat will be used to restore additional areas on the Site where there is active erosion and peat drying occurring. This will have a beneficial effect on the peatland, offsetting the negative effects of peat excavation.

Assessment of Effects

Construction Effects

5.12 Construction activities were found to have negligible effects related to pollution of groundwater and surface water quality. Construction activities will have minor effects on erosion and sedimentation, runoff rates and flooding. These effects are therefore considered to be minor (not significant).

5.13 Based on the analysis presented in the PLHRA (**Appendix 7.4: Peat Landslide Hazard and Risk Assessment**), risks are calculated to be low for the Site. Good practice measures to further mitigate the risks are discussed in **Appendix 7.4**.

5.14 The effects of the Proposed Development on peat prior to mitigation are assessed as being minor to **Moderate**.

5.15 The total volume of peat predicted to be excavated does not exceed the intended peat reuse volume, so no disposal of excess peat offsite is expected.

Operational Effects

5.16 No operational effects are predicted for geology, hydrology, hydrogeology, and peat.

Cumulative Effects

5.17 The proposed Bhlaraídh Wind Farm Extension and the Proposed Development are within separate hydrological sub-

catchments and therefore there will be no cumulative effects during the construction of both wind farms sites.

5.18 Deep peat avoidance has been embedded through design and with peat restoration proposed at both sites. As such, it is considered that the predicted cumulative effects during construction on the peat disturbance are minor (not significant).

Mitigation and Enhancement Measures

5.19 Infrastructure will be microsited to reduce the amount of peat being disturbed.

5.20 The peat restoration and reuse strategy for the excavated peat is focused on immediate translocation of the best quality peat from the excavated areas to the areas of peat erosion. The restoration of the eroded peatland areas would be a positive enhancement to the current conditions on Site.

5.21 The specific mitigation and enhancement measures are outlined in the Outline PMP (**Appendix 7.3**) and OREP (**Appendix 8.5**).

Significant Residual Effects

5.22 The residual effects on hydrology and peat are minor and not significant.

Significant Residual Effects

With the implementation of peat management and restoration measures, effects on peat are not significant as a result of the Proposed Development.

6. Ecology

Introduction

6.1 The ecology assessment considered the potential construction and operational effects associated with the Proposed Development on designated sites, habitats and protected species (excluding birds), and cumulative effects.

Baseline Conditions

6.2 The River Moriston Special Area of Conservation (SAC) is located adjacent to the Site at the south of the Bhlaraidh Wind Farm existing access track. Levishie Woods SSSI is a short distance outside the Site. Extents of ancient woodland are present along the Bhlaraidh Wind Farm existing access track in the south of the Site.

6.3 The Site was found to support a range of habitats of conservation concern, including priority heathland and bog habitats. Peatlands were recorded throughout and noted to exhibit a range of conditions.

6.4 Protected species were confirmed to be present within the Site and/or wider estate. Levels of bat activity across the Site were generally low, and only limited evidence of otter, badger and pine marten was noted. Water vole were recorded in several locations, with further extents of suitable but unoccupied habitat also noted.

Embedded Mitigation

6.5 Key features of the embedded mitigation to be delivered through the CEMP include the following:

- Appointment of an advisory Ecological/Environmental Clerk of Works (ECoW) to provide onsite support and advice throughout construction, and to monitor compliance with the CEMP;
- Adherence to best practice pollution prevention and watercourse crossing design;
- Location of infrastructure on non-peat or shallower peat habitats, and less sensitive blanket bog where possible;
- Maintenance of a 50m buffer between watercourses/waterbodies and infrastructure where possible and minimisation of the number of watercourse crossings;
- Pre and post construction surveys;
- A Species Protection Plan (SPP) for monitoring of protected species during construction; and
- Consultation with the ECoW during micro-siting of watercourse crossings to ensure protection of the water environment and sensitive ecological features.



Image 6: Showing the blanket bog habitat and an area of bare peat within the Site.

Assessment of Effects

Construction Effects

6.6 Construction of the Proposed Development will result in the loss of limited extents of habitats of conservation concern. Of note, is a loss of bog habitats, which was assessed to be of minor significance.

6.7 Construction of the Proposed Development will result in effects on water vole through habitat fragmentation, as watercourses may become impassable thereby restricting movement within the metapopulation, and mortality through direct contact with works. These effects were assessed to be of minor significance.

6.8 No significant effects were predicted on designated sites, bats, otter, badger, and pine marten during construction.

Operational Effects

6.9 Operational effects were only considered with regards to bats, and all other ecological features were scoped out.

6.10 Effects of operation of the Proposed Development on bats were limited to mortality as a result of collision with turbines and barotrauma. Given the relatively low levels of activity recorded across the Site, the effect was assessed to be of minor significance.

Cumulative Effects

6.11 The consented Bhlaraídh Wind Farm Extension lies adjacent to the south of the Site and has been considered as part of the cumulative assessment.

6.12 Although there is a cumulative loss of habitats of conservation interest, particularly of bog habitats, taking into consideration the extensive reinstatement and restoration proposed, no significant cumulative effects on habitats are predicted.

6.13 No significant cumulative effects are predicted for protected species during construction.

6.14 Bats were the only ecological feature considered in the cumulative assessment of operational effects and effects are predicted as not significant.

Mitigation and Enhancement Measures

6.15 Proposed mitigation measures include the following:

- The Outline Restoration and Enhancement Plan (OREP) includes measures related to peatland restoration. Additional areas of eroding peat have been identified within the wider Site and are estimated to amount to 2ha of additional possible peatland restoration;
- The OREP proposes the creation of native broadleaved woodland, riparian woodland, and montane scrub, representing an opportunity to create Scottish Biodiversity List (SBL) priority habitats, and contribute

towards the 50-year vision of the Highland Biodiversity Action Plan (BAP) for the uplands, which envisages a mosaic of healthy and functioning habitats, with a natural transition from woodland to heath and montane scrub;

- The proposed creation of woodland and scrub features in the OREP will enhance the diversity and connectivity of habitats within the Site;
- The OREP includes a programme of monitoring to ensure the efficacy of measures associated with peatland restoration, and habitat creation and management;
- Species listed on the SBL - including bats, pine marten, mountain hare, otter and badger - will benefit from enhanced structural diversity and connectivity of habitats within the Site; and
- The OREP proposes a programme of water vole monitoring, to allow an assessment of density and variation of the population of this SBL and Highland BAP priority species, to explore its stability and/or vulnerability and allow for identification of any issues regarding predation.

Significant Residual Effects

6.16 No significant residual effects of either construction or operation have been identified.

Although not significant in EIA terms, with the implementation of the OREP positive effects on biodiversity are predicted as a result of the Proposed Development.



Image 7: Showing eroding peatland within the Site.



Image 8: Mosaic of habitats within the Site utilised by different bird species

7. Ornithology

Introduction

7.1 This ornithology assessment considered the potential effects of the Proposed Development on birds and how they might be affected (directly or indirectly) by the construction and operation of the Proposed Development. Cumulative effects were also considered.

Baseline Conditions

7.2 Desk-based studies and field surveys were carried out in and around the Proposed Development over respective 'study areas' to establish baseline conditions and the bird species and populations present.

7.3 It was possible to 'scope out' the effects on a number of species of high Nature Conservation Importance by virtue of their ecology, absence, distance from the Proposed Development, small numbers, low levels of activity and the nature and location of this activity.

7.4 Two bird species were included in the assessment, golden eagle and red-throated diver. These species are considered to be of high Nature Conservation Importance due to their listing as Annex I (Birds Directive) and Schedule 1 (Wildlife and Countryside Act 1981, as amended by the Nature Conservation (Scotland) Act 2004).

Embedded Mitigation

7.5 A number of embedded mitigation measures will be implemented for ornithology as noted below:

- A flight corridor was maintained as part of the design to allow red-throated diver to access for feeding at larger lochs;
- Breeding sites and waterbodies used by bird species during baseline surveys have been buffered, including

black grouse lek sites and red-throated diver breeding sites;

- The final turbine layout has been designed to minimise potential effects on golden eagle; and
- A diver raft will be deployed on Loch nam Meur before the start of construction, at a distance greater than 500m from construction activities.

Assessment of Effects

Construction Effects

7.6 Habitat loss arising from the construction of tracks, borrow pits and turbine bases is unlikely to result in adverse impacts upon any bird species. Population reductions due to habitat loss, displacement and/or collision mortality are also likely to be minimal. Overall, potential impacts are likely to be negligible and not significant for all bird species.

Operational Effects

7.7 No operational effects are anticipated.

Cumulative Effects

7.8 The contribution of adverse effects associated with the Proposed Development to regional populations would be undetectable and so cumulative effects of the Proposed Development with existing and planned wind farm developments in the region are judged as being unlikely to have a significant effect on existing bird populations.

Mitigation and Enhancement Measures

7.9 No mitigation is required; however, the Proposed Development also includes proposals for an OREP which will serve to enhance and maintain suitable habitats for moorland

breeding species and breeding raptors within the Site away from operational infrastructure. Annual monitoring will also be undertaken to check the effectiveness of habitat management for golden eagles. Three diver rafts will be deployed across the Site as an enhancement for breeding divers.

7.10 Further enhancement measures are also proposed to support golden eagle population growth across Natural Heritage Zone (NHZ) 7. A Regional Eagle Conservation Management Plan (RECM) approach will be adopted, which will include site-specific habitat measures, coupled with on-going monitoring of the breeding status of the local golden eagle territories. More details are provided in **Appendix 9.5: RECM** of the EIA Report.

Residual Effects

7.11 The Proposed Development will not have any significant residual effects on ornithology.

Through careful design of the Proposed Development, no significant effects are predicted on ornithology, and a number of measures are proposed to be put in place through the OREP which will provide benefits to a number of species, including golden eagle which will also benefit from the implementation of the RECM.

8. Cultural Heritage

Introduction

8.1 The cultural heritage chapter presents the findings of the likely potential effects of the Proposed Development on the historic environment. Cultural heritage comprises the physical evidence for human activity that connects people with place, linked with the associations we can see, feel and understand. Its constituent parts known as 'heritage assets'. These can be tangible features, buildings, or places or intangible stories, traditions and concepts.

Baseline Conditions

8.2 To establish the cultural heritage baseline conditions a desk-based assessment and field survey were undertaken. The potential for heritage assets whose cultural significance may be affected by setting change was informed by the Zone of Theoretical Visibility (ZTV) for the Proposed Development.

8.3 No heritage assets were identified within the area where turbines are proposed to be sited. Two designated heritage assets and 28 non-designated heritage assets were identified within 5km of the Proposed Development. A further ten scheduled monuments, 76 listed buildings and one conservation area were identified beyond 5km, which may be affected by setting change were included and included in the cultural heritage baseline.

Embedded Mitigation

8.4 Care has been taken to avoid turbines being either skylined in views toward assets or being located on key lines of sight to and between assets.

Assessment of Effects

Construction Effects

8.5 No significant effects on designated or non-designated heritage assets were identified as a result of the construction or operation of the Proposed Development.

Operational Effects

8.6 No significant effects on designated or non-designated heritage assets were identified as a result of the construction or operation of the Proposed Development.

8.7 Non-significant effects due to setting change as a result of the operation of the Proposed Development were identified.

Cumulative Effects

8.8 No cumulative effects are anticipated.

Mitigation and Enhancement Measures

8.9 No mitigation is required for cultural heritage.

Image 9: Urquhart Castle from Loch Ness



Residual Effects

8.10 No significant residual effects have been identified.

There will be no significant effects on cultural heritage as a result of construction and operation of the Proposed Development.



Image 10: Showing the memorial cairn marking the location of the battle of Carn Mharbh Dhaoine (a non-designated heritage asset).

9. Noise and Vibration

Introduction

9.1 The potential noise effects of the Proposed Development on noise-sensitive receptors have been assessed during construction and operation. Potential effects associated with vibration were considered but scoped out of detailed assessment. Cumulative operational noise effects were also scoped out of full assessment.

Baseline Conditions

9.2 Whilst no specific baseline monitoring was undertaken to support the noise assessment for the Proposed Development, existing noise levels at neighbouring residential dwellings are expected to be typical of a quiet/rural environment. The properties to the north of the Proposed Development may expect to experience road traffic noise from the nearby A831 and water flow noise from the River Enrick. The properties to the south will experience road traffic noise from the A887 water flow noise from the River Moriston.

Embedded Mitigation

9.3 Noise resulting from the construction of the Proposed Development particularly in terms of access requirements, and when considering this occurring at the same time as the construction of other developments in the area, are expected to meet typical limits without any specific mitigation being required.

9.4 Typical noise mitigation measures (including good practice working methods) can be employed to ensure that all statutory requirements are met in this respect.

Assessment of Effects

Construction Effects

9.5 Construction of the Proposed Development is expected to meet typical noise limits for activities of this type. As a result, this aspect is considered not significant. Nevertheless, 'best practicable means' will be used to minimise any potential disruption from these noise generating activities and both THC and any local residents located near to access works will be kept informed as to the proposals and to progress in general.

Operational Effects

9.6 The operational noise assessment indicates that predicted turbine noise levels will easily meet the requirements of ETSU-R-97 without the requirement for mitigation/curtailment. Appropriate control measures can be put in place through the imposition of planning conditions to ensure this will be the case in practice. The predicted operational noise levels are so low that there would also be no

requirement to undertake a cumulative assessment. As a result, no significant operational effects are anticipated.

Cumulative Effects

9.7 No significant effects are predicted for cumulative noise effects during construction or operation.

Mitigation Measures

9.8 No specific mitigation is required.

Residual Effects

9.9 No significant effects are predicted for cumulative noise effects during construction or operation.

Overall noise effects are considered not significant.

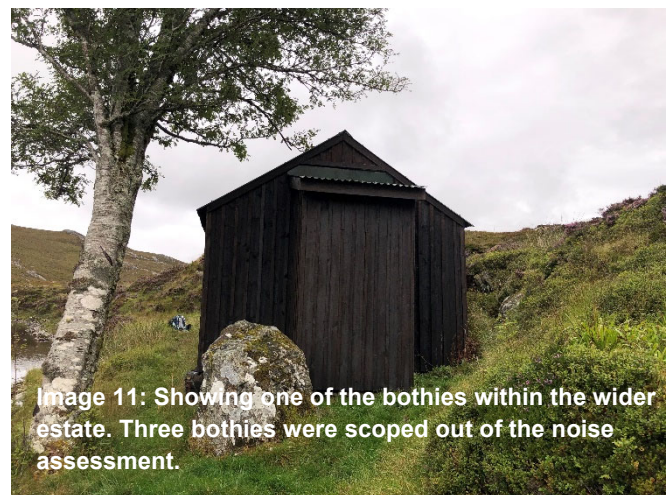


Image 11: Showing one of the bothies within the wider estate. Three bothies were scoped out of the noise assessment.

10. Traffic and Transport

Introduction

10.1 The potential effects of the Proposed Development associated with traffic and transport during the construction of the Proposed Development have been assessed. The assessment identifies the likely volume of traffic that will be generated during construction (including cumulatively with other schemes) and the effect that this will have on the local road networks, including on sensitive receptors, compared to baseline levels of traffic volumes.

10.2 The operational traffic associated with the Proposed Development will be minimal so operational effects of traffic on the public road network (including cumulatively) are not considered in detail.

Baseline Conditions

10.3 The Proposed Development will be accessed through the existing Bhlaraidh Wind Farm access, located along the A887.

10.4 Baseline traffic information was obtained from the UK Department for Transport (DfT) and Transport Scotland (TS) databases. Speed information obtained suggests that there is a need for greater enforcement along road links within the study area.

10.5 While there are no Core Paths or National Cycle Routes within the Site or its immediate vicinity, there is a small section of route HI17 is located along the proposed access to the Proposed Development and this is listed as an “other route” and is not designated as a Right of Way.

10.6 Loads relating to the turbine components would be delivered from two separate proposed Ports of Entry (PoE) for the Site, which are Kyle of Lochalsh Harbour for the blades and Corpach Harbour for the tower components.

10.7 Blade deliveries will depart Kyle of Lochalsh Harbour using a blade lifting trailer (see **Image 13**), with blades loaded at the port. The blade delivery vehicles will then proceed onto Skye towards Broadford Airport where the blades are transferred onto a standard trailer at the airport. The blade delivery vehicle will undertake a U-turn at Broadford Airport and will travel eastbound along the A87 (T) to the Site.

10.8 Tower components will exit Corpach Harbour and will continue directly to the Site via the A830 and A82(T).

Embedded Mitigation

10.9 A number of measures will be implemented to manage traffic and deliveries to the Site as noted below.



Image 12: Showing a blade lifting trailer.

Assessment of Effects

Construction Effects

10.10 The maximum traffic effect associated with construction of the Proposed Development is predicted to occur in Month 8 of the programme. During this month, an average of 78 HGV movements is predicted per day and it is estimated that there would be a further 52 car and light van movements per day to transport construction workers to and from the Site.

10.11 Effects on HI17 Route Users is predicted as **Major** for severance, pedestrian amenity, fear and intimidation and accidents and safety and **Major / Moderate** for Pedestrian delay.

10.12 It should be noted that the impacts relate solely to the peak of construction activities and that the construction period is short lived and the effects transitory in nature.

Operational Effects

10.13 As noted above, an assessment of operational effects has not been undertaken.

Cumulative Effects

10.14 The cumulative impact during construction will not be significant as there will be no road capacity issues.

Mitigation Measures

10.15 The following measures will be implemented to mitigate any adverse effects of construction traffic during the construction phase:

- Construction Traffic Management Plan;
- Abnormal Load Transport Management Plan;

- Access Management Plan (AMP); and
- A Staff Sustainable Access Plan.

10.16 The movement of AIL traffic would require small scale and temporary remedial works, which are presented in **Appendix 12.1**.

Residual Effects

10.17 No significant residual effects are anticipated in respect of traffic and transport issues.

There will be no significant effects associated with traffic and transport as result of construction and operation of the Proposed Development. The Applicant is committed to implementation of a Traffic Management Plan to manage vehicle movements during busy periods and will liaise with the community as construction progresses.



Image 13: Baseline view towards the Proposed Development from Viewpoint 15 Core Path at Loch Affric

11. Socio-Economics, Tourism and Recreation

Introduction

11.1 The socio-economic assessment has considered the potential for direct and indirect employment generation and any additional economic benefits as a result of the Proposed Development. It also considers potential effects in relation to recreation, and tourism.

Baseline Conditions

11.2 The Highland Council area has a population of over 235,000 residents and experienced an increase of 2.0% over the period 2010 to 2020, which is less than the Scottish and Great Britain (GB) level. The Highlands also has a lower level of economically active residents compared with Scottish and GB levels.

11.3 The Highlands have higher rates of water supply related posts, construction jobs, wholesale and retail trade, accommodation and food service occupations and recreation posts when compared with Scottish and GB levels, and is therefore well positioned to benefit economically from construction and operation of the Proposed Development.

11.4 The area is a well-known tourism destination, which supports a growing number of jobs as tourism volumes have grown over the last decade, up to the period of 2020 when tourism was adversely affected by the Covid-19 pandemic. Tourism has rebounded strongly and the local area has a number of popular visitor attractions and has developed other supporting infrastructure in the form of accommodation and enhanced transport infrastructure. Recreationally, the area is rich in recreational assets and there are many popular walks and routes around Loch Ness.

Overview of Effects

Construction Effects

Employment and Economic Benefits

11.5 It is estimated that there will be 30.2 Person Years Employment (PYE) generated by the construction of the Proposed Development.

11.6 In relation to 30.2 PYEs a Gross Value Added (GVA) effect of £2.14 million and a salary effect of £1.12 million is predicted as a direct result of employment onsite during the construction of the Proposed Development.

11.7 The estimated development and construction cost of the Proposed Development is expected to be approximately £85.8 million based on an estimated capital expenditure of £1m per installed MW. It is anticipated that up to 10% of the overall value of contracts could be realised in the Highlands (up to £8.58 million).

11.8 As such, it is considered that construction will have an effect of Minor (positive) significance on direct employment and economic benefits for the Highlands.

11.9 The effect of the creation of 55 additional direct, indirect and induced PYEs, £4.52 million in GVA effects and salary effects of £2.11 million and wider expenditure benefits in the region of £644k is of minor (positive) significance for the local employment and economic benefits within the Highlands.

Operational Effects

Employment and Economic Benefits

11.10 Due to their remote operational control and limited need for servicing, wind farms do not create large numbers of jobs during the operational stage.

11.11 The operational phase of the Proposed Development will directly generate 1.6 FTE employees.

11.12 In relation to 1.6 FTEs an annual GVA effect of £59k and an annual salary effect of £33k as a direct result of employment onsite during the operation of the Proposed Development is predicted. Over the operating lifetime of the Proposed Development, 35 years, this equates to a GVA effect of £2.4 million and a salary effect of £1.3 million (in 2023 prices). A minor (positive) effect is therefore likely in relation to direct employment generation.

11.13 The Applicant will contribute £5,000 per MW of installed capacity per annum into a Community Benefit Fund (CBF). This equates to £429,000 of income per annum, or over £15 million over the 35-year operational life of the

Proposed Development, subject to the eventual turbine type installed and capacity installed.

11.14 A **Moderate (positive)** effect is predicted for the Proposed Development in relation to direct economic benefits.

11.15 The potential annual indirect and induced job creation of 2.96 FTEs, £105k in GVA terms and £53.8k in salary terms from the operation of the Proposed Development over 35 years is considered to be of minor (positive) significance for the local economy in terms of indirect and induced employment and economic benefits. Over the 35-year lifetime of the Proposed Development this equates to a GVA effect of £3.7 million and a salary effect of £1.9 million.

Cumulative Effects During Construction and Operation

Employment and Economic Benefits

11.16 Other wind farm activity across the Highlands suggests there is a substantial economic opportunity in terms of cumulative investment and resultant employment effects as local capacity to take up the opportunities grow.

11.17 The addition of the Proposed Development will positively contribute to this and could result in increased beneficial effects in terms of job creation and opportunities for local businesses. It is anticipated that when considering the schemes cumulatively, there would therefore be a Minor (positive) and not significant effect on the economy during construction.

Recreation and Tourism

11.18 Given the overlapping nature of recreational and tourism receptors, the recreational and tourism effects have been considered together. The overall effect on Recreation and Tourism considered to be Minor and not significant.

Mitigation and Enhancement Measures

11.19 As there are no adverse effects there is no requirement for mitigation measures. However, there is scope to maximise local economic benefits during construction and operational phases. Potential enhancement measures include initiatives around maximising the role of local suppliers, including sharing information on contract opportunities and hosting 'meet the developer' events.

11.20 The Applicant is also considering potential upgrades to local paths and routes and has been working with the local community to ascertain which paths require upgrade and enhancements, with the Meall Fuar-mhonaidh path having been identified as a path which the Applicant is committed to upgrading. More details are provided in **Appendix 13.1: Outline Access Management Plan** of the EIA Report.

Residual Effects

11.21 There are potential minor positive significant effects in relation to the construction phases of the Proposed

Development, both in employment and GVA terms in the context of local economy.

11.22 A **Moderate (positive)** effect is predicted for the Proposed Development in relation to direct economic benefits.

11.23 There are potential minor (positive) effects in relation to the construction phases of the Proposed Development, both in employment and GVA terms in the context of the local economy.

11.24 It is anticipated that when considering the schemes cumulatively, there would therefore be a minor (positive) and not significant effect on the economy during construction and operation.

11.25 A minor effect on recreation and tourism is predicted.

A number of positive socio-economic effects are anticipated as a result of construction and operation of the Proposed Development, both in isolation and cumulatively with other schemes in the area. Furthermore, the Applicant is committed to contributing to a community benefit fund, equating to up to £429,000 of income per annum, or over £15 million over the 35-year operational life of the Proposed Development. Shared ownership is also available should this be of interest to the local community.



Image 14: Photograph showing the typical upland habitat found across the Site.

12. Other Issues

Introduction

12.1 The other issues assessment assesses the effects of the Proposed Development on climate change mitigation (including carbon balance) and adaption, and aviation and defence.

Climate Change Mitigation (including Carbon Balance) and Adaption

Introduction

12.2 The climate change assessment has considered the potential effects of the Proposed Development on climate change mitigation (including carbon balance) and adaptation.

Baseline Conditions

12.3 The assessment considered the projected changes in temperature, precipitation and wind speed and storms by 2060-2079, when the Proposed Development will reach the end of its lifetime. The projections highlight that in 2060-2079, summer and winter temperatures are likely to be greater than the current baseline (greater for summer), with winter rainfall increasing and summer rainfall decreasing.

Construction Effects

12.4 Overall, the Proposed Development will be a net generator of greenhouse gas (GHG) emissions during construction. A Minor (negative) (and Not Significant) effect is predicted in relation to carbon emissions including direct CO₂ and NO_x emissions from HGV vehicles.

Operational Effects

12.5 Whilst it has not been possible to calculate construction traffic emissions for HGVs and personnel, overall, it is considered that these will be offset during the Proposed Development's operational life along with any backup generation if required, and that a **Moderate (positive)** effect is likely on balance, in relation to carbon losses and savings.

12.6 Assuming a 35-year operational life and based on an overall expected annual carbon saving of 40,000 tCO₂e and a total carbon loss (during both construction and operation) of 96,000 tCO₂e, this equates to a total saving of approximately 1.3 million tCO₂e over the Proposed Development's operational lifetime. It is calculated that the CO₂ emissions that will be emitted as part of the construction of the Proposed Development will be paid back within approximately 2.4 years. In addition, over 1,200 tonnes of CO₂e gains are estimated from the restoration of degraded bog on the Site.

12.7 The Proposed Development's carbon saving potential will contribute positively to meeting Scotland's net zero greenhouse gas emissions targets.

12.8 In terms of adaptation, further consideration was given as to whether or not the introduction of the Proposed Development is likely to affect judgements of effects and/or the ability of the receptors within or close to the Site to adapt to climate change. Predicting future outcomes is naturally difficult, however in combination climate effects are not predicted to vary markedly over the Proposed Development's lifespan from the effects set out already in the EIA Report and summarised in this NTS.

Cumulative Construction Effects

12.9 Climate change is, in essence, a cumulative effect due to emissions from multiple sources including new development. All wind farms will involve the generation of direct and embodied greenhouse gas emissions during construction. It is assumed, however, that any other applications that are consented and built will include reasonable measures to avoid, reduce and /or avoid the generation of greenhouse gas emissions, particularly from construction traffic. Overall, a Minor (negative) cumulative construction effect is therefore predicted which will be not significant.

Cumulative Operation Effects

12.10 In terms of carbon losses and offsetting, the Proposed Development, in combination with other onshore wind developments, will have a positive effect on offsetting

emissions released from the burning of fossil fuels and will play an integral part in helping Scotland meet its climate change and energy targets. A **Major (positive)** effect is therefore identified, given the importance of this collective role of onshore wind generation to addressing the global climate emergency.

12.11 In relation to adaptation, with respect to in-combination climate effects, this is largely a project specific consideration and effects are considered to be not significant.

Mitigation Measures

12.12 No specific mitigation measures are proposed in relation to climate change, although a CTMP will be implemented as good practice, with the intention that measures will be implemented to ensure traffic movements are undertaken efficiently during construction, and unnecessary journeys avoided.

Residual Effects

12.13 There will be a **Moderate (positive)** effect in relation to carbon losses and carbon offsetting (climate change mitigation) during operation of the Proposed Development and a **Major (positive)** effect in relation to carbon losses and carbon offsetting (climate change mitigation) cumulatively during operation.

Aviation and Defence

Introduction

12.14 The assessment of effects on aviation and defence considered potential effects on the aviation and air defence activities of the Ministry of Defence (MOD) as safeguarded by the Defence Infrastructure Organisation (DIO). It also considered the possible effects of wind turbines upon the National Air Traffic Services En Route Ltd (NERL) communications, navigation and surveillance systems.

Baseline Conditions

12.15 The Proposed Development is located in an area relatively remote from aviation facilities. It is 47km to the south-west of Inverness Airport and 93km to the south-west of RAF Lossiemouth. The Site is 10km to the east of the eastern boundary of R610A, known as the Highlands Restricted Area (HRA), used by the MOD for tactical low flying. The closest regulated airspace is over 25km to the east used by traffic inbound and outbound from Inverness and beyond.

Potential Effects

12.16 The turbines will not be visible to any civil or military radars or impinge upon any airport physical safeguarded surfaces.

Mitigation Measures

12.17 The Applicant has sought to minimise the requirement for aviation lighting and as a result aviation lighting will be required on six of the 13 turbines for aviation safety reasons (T1, T4, T7, T10, T12 and T13). There is no requirement for any other aviation mitigation.

Residual Effects

12.18 No significant residual effects are predicted.



Image 15: Showing a view of the Site.

It is calculated that the CO₂ emissions that will be emitted as part of the construction of the Proposed Development will be paid back within approximately 2.4 years. Following this period, the Proposed Development will, in effect, be in a net gain situation and will contribute to national objectives to reduce carbon emissions.



Image 16: Photomontage of the Proposed Development from Meall Fuar-mhonaidh (LVIA Viewpoint 2)

13. Summary of Significant Effects

Introduction

13.1 The EIA for the Proposed Development has been carried out in accordance with regulatory requirements and guidance on good practice. The findings of the surveys undertaken, in addition to consultation, have informed the design process and assessment.

13.2 Prior to mitigation, potential significant effects have been predicted within the EIA Report in relation to:

- Landscape and Visual Amenity (including adverse effects one LCT, up to six viewpoints, the settlement of Balnain, short sections of the B862, Affric Kintail Way, Caledonia Way cycle route and the South Loch Ness Trail and rights of way close to the Site);
- Geology, Hydrology, Hydrogeology and Peat (adverse effects on peat);
- Traffic and Transport (adverse effects for HI17 route users);
- Socio-Economics (positive in relation to economic benefits); and
- Climate Change (positive).

13.3 The significant adverse effects on peat and the users of HI17 will be reduced to minor through the implementation of mitigation.

13.4 Significant adverse residual effects from the Proposed Development are limited to Landscape and Visual Amenity. These effects cannot be mitigated further given the inherent nature of wind farm development, but they have been reduced to the lowest practical level via the iterative design process.

13.5 Significant residual positive effects are predicted for Socio-Economics (**Moderate**) and Climate Change Mitigation and Adaptation (**Moderate** effect during operation of the Proposed Development and a **Major** effect cumulatively during operation). In addition, whilst not significant in EIA Terms, positive effects are also predicted for peat and peatland habitats as a result of implementation of the OREP.



Image 17: Showing a photo of a peat hagg on the Site.

Appendix 1: Glossary of Terms

Term	Definition
Abnormal load	Vehicles that weight more than 44,000 kg carrying a load which due to its weight, or dimensions cannot be carried on a conventional goods vehicle and requires a special vehicle and arrangements for its transport.
ALTMP	Abnormal Load Transport Management Plan. A management plan that includes all the procedures and protocols in place for abnormal loads vehicular movement from and to the Proposed Development.
AMP	Access Management Plan. A plan describing how public access rights will be managed on access tracks during construction of the Proposed Development.
Anemometer	A device that measures wind speed and direction.
Attenuation	Reduction of the force or intensity of something.
Barotrauma	Tissue damage caused by rapid or excessive pressure change. In this case, internal tissue damage in bats due to air pressure changes brought on by wind turbines.
Baseline	Original status of the environment in the area before the development work of the project is started.
CEMP	Construction Environmental Management Plan; plan outlining how construction activities will be managed on site.
CO₂	Carbon dioxide; a greenhouse gas that comes from the extraction and burning of fossil fuels (such as coal, oil, and natural gas).
Concrete batching	The process of measuring ingredients or materials to prepare concrete mix.
Consenting authority	Authority responsible for approving development proposals.
Core Paths	Paths, waterways or any other means of crossing land to facilitate, promote and manage the exercise of access rights under the Land Reform (Scotland) Act 2003.
Crane hardstanding	Ground surfaced with a hard material on which a crane is placed to erect turbines.
CTMP	Construction Traffic Management Plan. A plan which outlines traffic management measures to manage construction related traffic.
Cultural Heritage	Artefacts, monuments, a group of buildings and sites that have a diversity of values including symbolic, historic, artistic, aesthetic, ethnological or anthropological, scientific and social significance.
Decarbonisation	The process of reducing CO ₂ emissions resulting from human activity in the atmosphere.
DfT	Department for Transport; Ministerial UK department responsible for supporting, planning and investing in the UK transport network.
DIO	Defence Infrastructure Organisation; department of the UK Ministry of Defence supporting the armed forces to enable military capability by planning, building, maintaining, and servicing infrastructure.
ECoW	Ecological Clerk of Works. Professional appointed to monitor compliance with relevant legislation, planning conditions and associated documents during construction.
EIA	Environmental Impact Assessment.

Term	Definition
	A tool used to assess the significant effects of a project or development proposal on the environment.
Geology	The study of the materials, processes, products, physical nature, and history of the Earth.
GWDTes	Groundwater Dependent Terrestrial Ecosystems. A category of wetlands, understood to be ecologically critically dependent upon groundwater.
GVA	Gross Value Added
Habitat fragmentation	Occurs when parts of a habitat are destroyed, leaving behind smaller unconnected areas.
HGV	Heavy Goods Vehicle
Hydrogeology	Study of groundwater.
Hydrology	The study of the distribution and movement of water both on and below the Earth's surface, as well as the impact of human activity on water availability and conditions.
Iterative	Doing something again and again to improve it.
Landscape designations	Landscapes which have a degree of protection from development change.
Laydown area	An area that has been cleared for the temporary storage of equipment and supplies.
LCT	Landscape Character Type. Areas of consistent and recognisable landscape character as defined in NatureScot mapping.
Lochan	Small inland loch.
LVIA	Landscape and Visual Impact Assessment. The process of evaluating the landscape and visual effects of the Proposed Development.
Metapopulation	A group of groups, that is made up of the same species.
Micro-siting	The process through which the specific location of wind turbines is determined (in this case, within 50m of the proposed infrastructure locations).
Mitigation measures	Measures to reduce, avoid or offset the potential adverse environmental effects of development activities.
MoD	Ministry of Defence.
NO_x	Nitrogen oxide
NSA	National Scenic Area NSAs are landscape designations of national importance.
Offsetting	In the context of climate change, a mechanism to reduce greenhouse gas (GHG) emissions in the most cost-effective and economically-efficient manner.
OREP	Outline Restoration and Enhancement Plan. Outlines proposals to which the Applicant is committed to exploring to provide mitigation and also biodiversity enhancements within the Site. Measures relate to peat, ecology, ornithology and forestry.
Ornithologist	Person who studies or is an expert in birds.
Ornithology	The study of birds and everything that is related to birds.
Outcrops	Part of a rock formation that appears at the surface of the ground.

Term	Definition
PYE	Person Years Employment
PLHRA	Peat Landslide Hazard Risk Assessment. Identifies, mitigates and management peat slide hazards and associated risks with the Proposed Development.
PMP	Peat Management Plan. Plan aimed to minimise disruption to peatland and ensure that all further opportunities to minimise peat disturbance and extraction will be taken during design and construction of the Proposed Development.
Power Purchase Agreement (PPA)	Long-term electricity supply agreement between two parties, usually between a power producer and a customer (an electricity consumer or trader).
PPP	Pollution Prevention Plan. Plan outlining measures to prevent and/or mitigate the significant adverse effects of pollution events as a result of the activities associated with the Proposed Development.
PWS	Private Water Supply.
Receptor	A component of the natural or built environment that is affected by construction works and/or the operation of a proposed development.
Scoping opinion	A scoping opinion refers to the range of issues which the authority considers should be included in an EIA.
SLA	Special Landscape Area SLAs are regionally valuable landscapes identified to protect and enhance landscape qualities and promote their enjoyment.
SPP	Species Protection Plan. Plan which details the approach to monitoring of protected species during construction.
Statutory consultees	Organisations and bodies who must be consulted on relevant planning applications.
tCO₂e	Tonnes (t) of carbon dioxide (CO ₂) equivalent (e).
TS	Transport Scotland; the national transport agency for Scotland.
Undulating landscape	Smoothly rising and falling form of landscape.
WLA	Wild Land Area are the most extensive areas of high wildness. They are not a statutory designation.
ZTV	Zones of theoretical visibility is a computer-generated tool to identify the likely (or theoretical) extent of visibility of a development.