BHLARAIDH WIND FARM EXTENSION **EIA NON-TECHNICAL SUMMARY**

AUGUST 2021

sse | For a better world of energy

Document Information

Project Name:	Bhlaraidh Wind Farm Extension
Document Title:	Non-Technical Summary
Client Name:	SSE Renewables
Client Contact:	[redacted]
Client Address:	One Waterloo Street, Glasgow, G2 6AY
Document Status:	Final for Issue
Author:	[redacted]
Reviewed:	[redacted]
Approved:	[redacted]
Date:	2021-08-03
Version:	5.0
Project/Proposal Number:	EDI_1571
ITPEnergised Office:	4th Floor, Centrum House, 108-114 Dundas Street, Edinburgh, EH3 5DQ

Revision History

Version	Date	Authored	Reviewed	Approved	Notes
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Contents

Abbreviations

CEMP	Construction Environmental Management Plan
CO_2	Carbon Dioxide
DAS	Design & Access Statement
ECoW	Ecological Clerk of Works
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
GW	gigawatt
GWDTE	Ground Water Dependent Terrestrial Ecosystem
GVA	Gross Value Added
km	kilometre
LiDAR	Light Detection and Ranging
m	metre
MP	Member of Parliament
MSP	Member of Scottish Parliament
MW	megawatt
NTS	Non-Technical Summary
PAC	Pre-Application Consultation
PAN	Proposal of Application Notice
PWS	Private Water Supplies
SAC	Special Area of Conservation
SEPA	Scottish Environment Protection Agency
THC	The Highland Council

Bhlaraidh Wind Farm Extension

Preface

This document is the Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIA Report) prepared to accompany the planning application for the proposed Bhlaraidh Wind Farm Extension (the Proposed Development). The Proposed Development is located on the Glenmoriston Estate, near Invermoriston, Highlands, centred on British National Grid Reference 239512, 820991 as shown on Figure 1 below.

The EIA Report comprises the following:

- Non-Technical Summary;
- Volume 1: Main Text;
- Volume 2: Figures (excluding Landscape, Visual and Cultural Heritage);
- Volume 3: Landscape and Visual Figures and Cultural Heritage Visualisations;
- Volume 4: Technical Appendices; and
- Volume 5: Confidential Information.

Additional supporting documents which form part of the application submission include a Planning Statement, a Pre-Application Consultation (PAC) Report, a Design and Access Statement (DAS) and an Outdoor Access Plan.

Due to the COVID 19 pandemic, and in line with The Electricity Works (Miscellaneous Temporary Modifications) (Coronavirus) (Scotland) Regulations 2020 that came into place on the 24th of April 2020, hard copies of the EIA Report will not be available for inspection at public locations. However, electronic copies of the NTS and full EIA Report are available online for download from the following website:

www.sserenewables.com/bhlaraidhextension

In addition, all documents are available (as a PDF for screen viewing only) on a USB or DVD free of charge or as a hard copy for £450.00 (including printing and distribution), from SSE Generation Limited.

Representations in relation to the application for consent may be submitted to the Energy Consents Unit 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 of representation.

Representations should be dated, clearly stating the name of the project (in block capitals), full return email and postal address of those making representations. All representations should be received no later than the date falling 30 days from the date of the last published notice, although Ministers may consider representations received after this date.

The EIA Report will be advertised on the project website and in the following newspapers upon submission of the application:

- Edinburgh Gazette;
- The Herald;
- The Press and Journal; and
- The Inverness Courier.

Non-Technical Summary

1. Introduction

This document is a Non-Technical Summary of the Environmental Impact Assessment (EIA) Report which supports the application by SSE Generation Limited (the Applicant) for the development of a wind farm (the Proposed Development) located on the Glenmoriston Estate, near Invermoriston, Highlands.

The Applicant intends to apply to the Scottish Ministers via the Scottish Government Energy Consents Unit (ECU) under Section 36 of the Electricity Act 1989 (as amended) seeking consent and deemed planning permission to construct and operate the Proposed Development.

1.1 The Applicant

The Applicant is part of SSE Renewables, a leading developer, owner and operator of onshore and offshore wind farms in the UK and Ireland, with a vision to make renewable energy the foundation of a zero-carbon world. The Applicant operates one of the largest onshore wind energy fleets in the UK and Ireland, with almost 2 gigawatt (GW) of installed green energy capacity, and another 1GW in development.

1.2 Need for Development

The science behind climate change is well established and points strongly towards a need to reduce our reliance on fossil fuels in order to avoid negative economic, environmental and social effects. International and European commitments to reducing CO_2 and tackling climate change have been made by all major economies. In response to these issues the UK and Scottish Governments have made significant, legally binding commitments to increase the use of renewable energy. The Proposed Development will make a direct contribution to meet those commitments.

2. Purpose of the EIA Report

ITPEnergised was commissioned by the Applicant to coordinate the EIA process for the Proposed Development in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

The EIA process is reported in an Environmental Impact Assessment Report, which describes the methods used to assess the beneficial and adverse environmental impacts predicted to result from the construction, operation and decommissioning of the Proposed Development. Where appropriate, it also sets out mitigation measures, which are practices designed to prevent, reduce and if possible, offset potential significant adverse environmental impacts. An assessment of residual effects, those expected to remain following implementation of mitigation measures, is also presented. This document presents a summary of the findings of the EIA Report in non-technical language.

3. Site Location & Description

The Proposed Development is located adjacent to the operational 32 turbine Bhlaraidh Wind Farm (the Operational Development) and will extend the Operational Development onto the adjoining land to the east. Figure 1 below shows the location of the planning application boundary (the Site).

The Proposed Development is located west of Loch Ness and the Great Glen, on an area of high rocky plateau. The open, undulating moorland of the Site features several rocky outcrops, small hills, many lochs, lochans, watercourses, areas of bog, tracks, hydroelectric infrastructure and turbines of the Operational Development.

Outwith the Site there are several distinctive hill summits, including Meall Fuar-mhonaidh which slopes steeply down to the Great Glen. To the west, this plateau transitions to a rugged, exposed landscape of large mountains and small lochs, while to the north there is the wooded Glen Urquhart and the farmed broad Strathglass valley. Glen Moriston is located to the south.

Further detail on the site location can be found in Chapter 2 of the EIA Report.

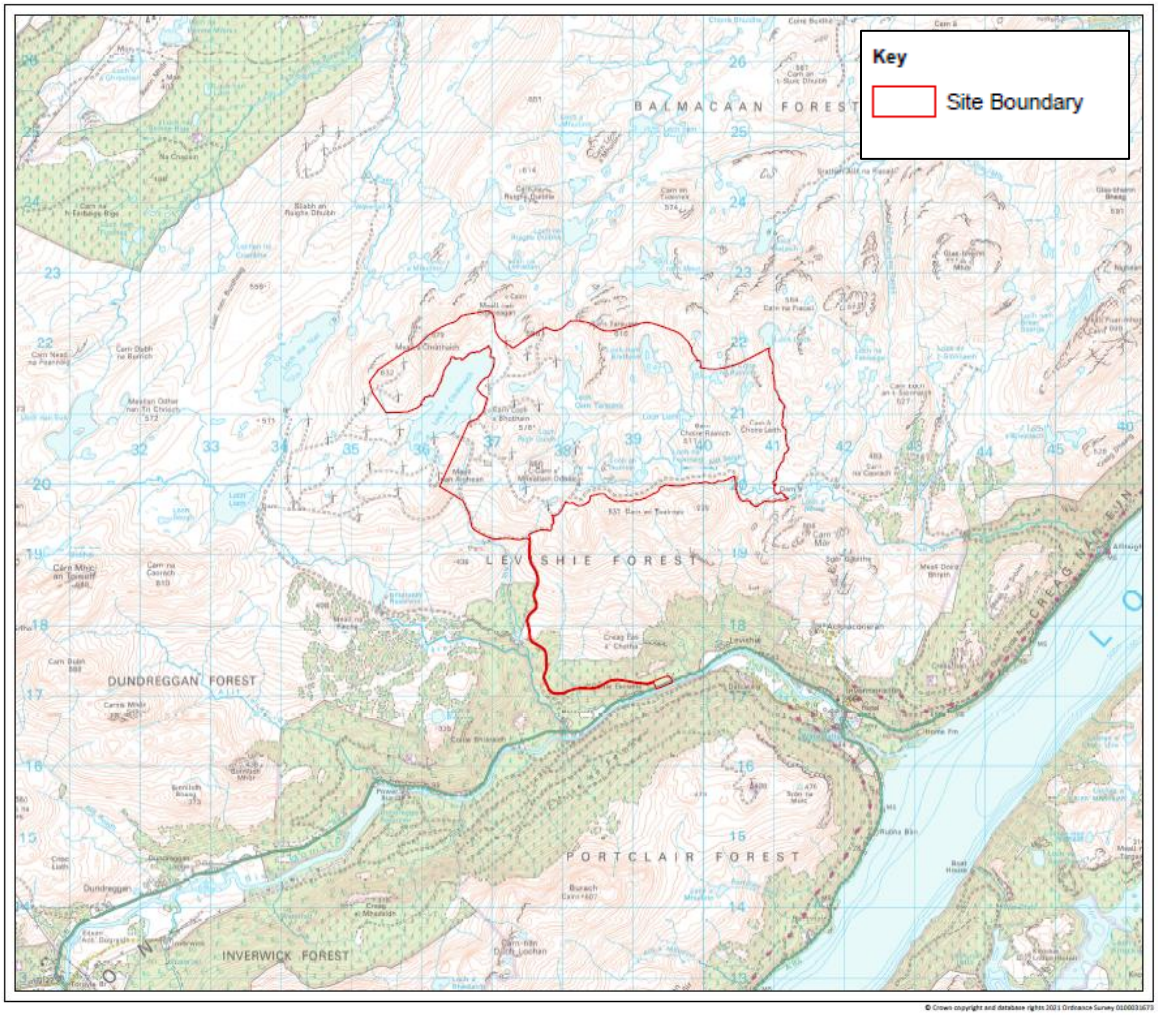


Figure 1 - Site Location Plan

3.1 Site Selection

As an extension to the Applicant's Operational Development, the Site is well known to the Applicant and they are well aware of the many qualities that make the Site an excellent wind farm location. Since the adjacent Operational Development was commissioned in 2017, the Scottish Government has declared a climate emergency and the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 has been passed. The Applicant therefore considered the Site to be worth assessing for its potential for development. The favourable attributes of the Site include:

- can positively contribute towards 2045 net zero emissions target and the climate emergency;
- knowledge from the Operational Development survey work suggested no or limited ornithological or ecological impacts would be expected;
- a location with no aviation and radar constraints;

- no forestry or replanting requirements;
- no identified cultural heritage assets (scheduled monuments, battlefields or designed gardens and landscapes) on the Site;
- the Site sits within a single landscape character area, Rocky Moorland Plateau, which is suitable for development;
- the Site is outwith the Highland Council Special Landscape Area – Loch Ness and Duntelchaig;
- an excellent and proven wind resource;
- sufficient grid capacity within the vicinity;
- the presence of the extensive network of existing access roads associated with the Operational Development and the Livishie hydroelectric power scheme. Therefore, reducing the requirements for new track;
- the presence of existing infrastructure which would be reused, including former hydroelectric scheme borrow pits and, construction compounds of the Operational Development, reducing the requirement for new infrastructure;
- opportunity to concentrate wind farms in a landscape that has already accommodated wind turbines and has the capacity to accommodate further development;
- can provide further socio-economic benefits to the local area;
- a location that is well separated from residential receptors;
- the infrastructure footprint would be located outwith nationally and internationally important cultural heritage, ornithological and landscape designations (and Wild Land); and
- the relative ease of delivery of turbine components.

4. Design Process

As part of the Environmental Impact Assessment process, multiple design iterations were prepared and considered for the turbine locations and on-site infrastructure, including access tracks and substation location. These took into account factors including comments received from consultees, environmental constraints, visual effects and technical feasibility. The following principles were adopted during the design iterations made by the Applicant to ensure that the final design of the Proposed Development was the most suitable for the Site:

- maintain a suitable separation distance from residential properties to minimise potential noise, flicker, air quality and visual amenity impacts;
- avoid designated and protected sites, as far as practicable;
- maintain appropriate separation distances to locations important for birdlife;
- sensitively site to avoid or minimise setting effects on historical and archaeological sites;
- avoid or minimise impacts on sensitive identified habitats and wildlife;
- where practicable avoid deep peat, areas of sensitive peat stability, and high quality and active peatland;
- minimise the number of watercourse crossings and buffer identified main surface watercourses to 50m where practicable;
- avoid siting of turbines on areas of the Site identified to be visually sensitive from key views, including the elevated ridge of Carn Tarsuinn and the south eastern corner of the Site;
- maximise performance and maintain adequate spacing between turbines;

- ensure the Proposed Development is feasible from an engineering perspective, including taking into consideration ground conditions and topography to minimise earthworks;
- utilise existing tracks and infrastructure, where practical, in order to reduce the footprint of the Proposed Development;
- ensure that the Proposed Development is compatible with the Operational Development and other cumulative developments; and
- avoid negative visual impacts and ensure a balanced / compact array from key views.

The Proposed Development layout put forward in the EIA Report is considered to represent the most appropriate design, taking into account potential environmental impacts and physical constraints, while maximising the renewable energy generating capability of the Site. The process of design iteration is explained fully in Chapter 2 of the EIA Report.

5. Description of the Development

5.1 The Proposed Development

The Proposed Development comprises a generating station consisting of a wind farm with up to 18 wind turbine generators of up to a maximum height of 180m from ground to blade tip when vertical, supported by ancillary development. The total installed capacity of the Proposed Development, whilst dependent on the rated power of the turbine model procured, is anticipated to be in excess of 100MW.

The Proposed Development will be supported by a number of ancillary elements, including the following:

- crane hardstandings;
- access tracks;
- drainage;
- watercourse crossings;
- on-site substation;
- underground cabling;
- a LiDAR meteorological monitoring station;
- two construction compounds;
- a batching plant; and
- borrow pits (eight search areas).

AT A GLANCE…

Number of Turbines: up to 18

Dimensions: 180m height from ground to blade tip

Generation Capacity: in excess of 100MW

Operational Lifespan: 50 years

A full description of the Proposed Development can be found in Chapter 2 of the EIA Report. Figure 2 below provides a plan of the proposed Site layout.

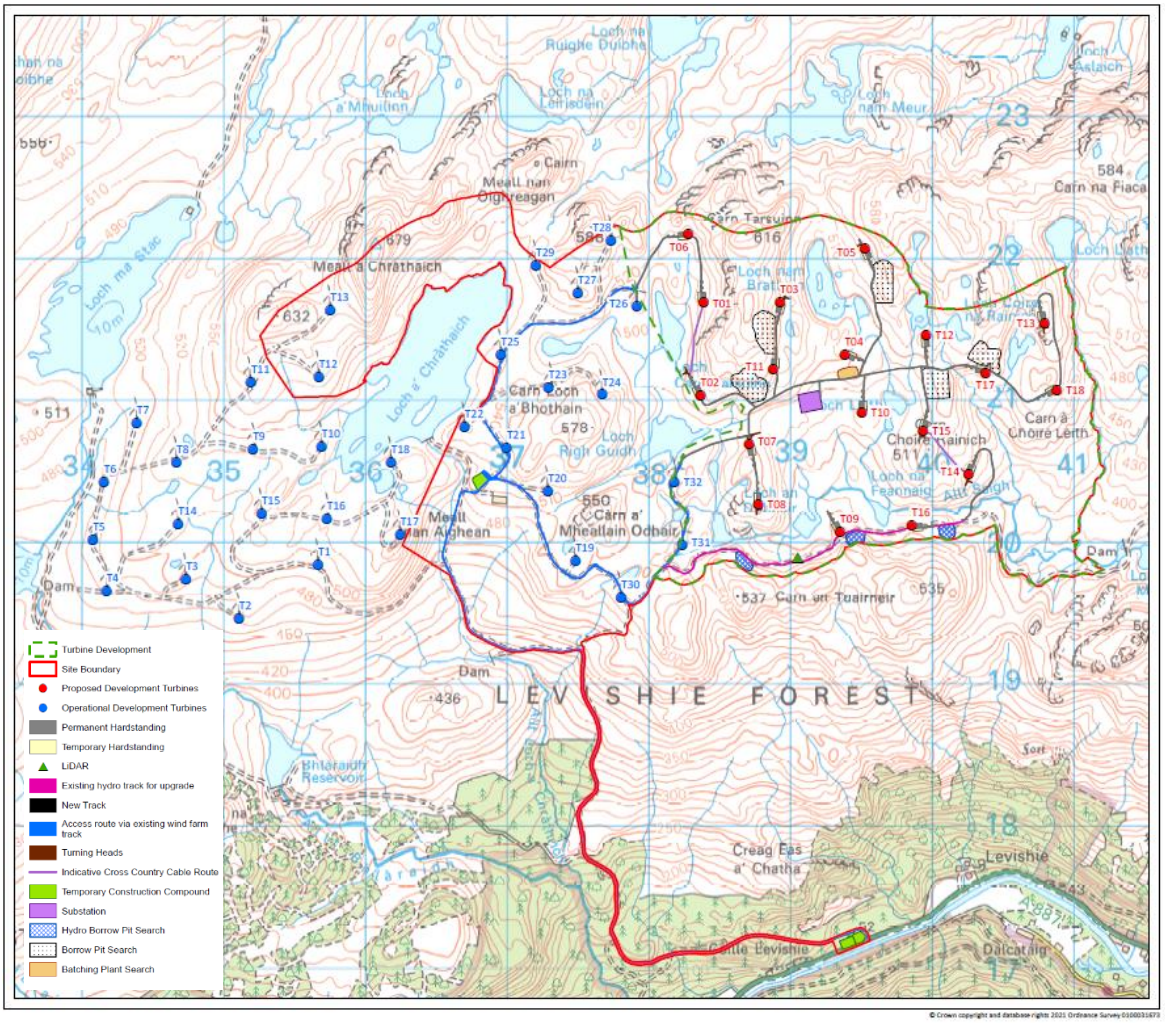


Figure 2 - Site Layout

5.2 Construction

The estimated on-site construction period for the Proposed Development is approximately 18 months and includes a programme to reinstate all temporary working areas.

Normal construction hours will be 07:00 to 19:00 Monday to Friday and 07:00 to 14:00 Saturdays. There shall be no construction traffic movements to or from the site outwith these hours or on Sundays or bank holidays. In the event of work being required out with these hours, e.g. abnormal load deliveries, commissioning works or emergency mitigation works, the Planning Authority will be notified prior to these works taking place wherever possible.

Table 1 below provides an indicative construction programme for the main items of work to be carried out, with work likely to be phased so that certain activities take place concurrently.

Table 1 Indicative Construction Programme

Task	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Establish Site Compound																		
Borrow Pit Operation Period																		
Reinstatement & Restoration																		
Access Track Construction																		
Turbine Base / Hardstandings																		
Concrete Deliveries																		
Cable Delivery & Installation																		
Turbine Delivery & Installation																		
Wind Farm Testing & Commissioning																		

As part of the construction phase of the Proposed Development, the Applicant will produce and adhere to a Construction Environmental Management Plan (CEMP). The CEMP will describe how the Applicant will ensure suitable management of relevant environmental issues during construction of the Proposed Development. This will be developed in consultation with NatureScot, Scottish Environment Protection Agency (SEPA), and The Highland Council (THC).

Further details of construction activities can be found in Chapter 2 of the EIA Report.

5.3 Operation & Maintenance

During operation, only site maintenance vehicles and local utility company vehicles will normally be required on the Site. Approximately three visits per week to the control building by maintenance personnel in four-wheel drive or conventional passenger vehicles will occur following the commissioning phase.

The Applicant will implement an Operation Environmental Management Plan which, similarly to the CEMP, would set out how the Applicant will manage and monitor environmental effects throughout operation.

5.4 Decommissioning

The operational lifespan of the Proposed Development would be 50 years, after which it would be appropriately decommissioned. It is expected that decommissioning would take approximately 12 months.

6. Scoping and Consultation

Consultation remains a critical component of the EIA process. In order to inform the EIA, there has been on-going consultation with statutory consultees, engagement through the formal EIA Scoping process (whereby the scope of the EIA was formally agreed with Scottish Ministers and relevant stakeholders) and subsequent discussions, correspondence and meetings as required. Full details of these are provided within each technical chapter of the EIA Report. The EIA consultation process, and Scoping in particular, is described in detail in Chapter 3 of the EIA Report. A summary of the consultation process is provided here.

6.1 Scoping

Scoping of potential issues against the physical and operational aspects of the Proposed Development provides a basis for ensuring that the assessment of environmental effects is appropriately limited to issues of genuine potential significance.

This ensures a proportionate approach focused on likely significant effects that have not already been considered. Consultation and engagement with stakeholders early in the process, with advice and input from key consultees being sought at the early stages of a project, helps greatly to inform decisions about the Proposed Development.

A Scoping Report was issued to the ECU in July 2019 to seek a Scoping Opinion from the Scottish Ministers on the environmental information to be provided in the EIA Report. A Scoping Opinion (herein referred to as 'the 2019 Scoping Opinion') was subsequently provided by the ECU on 2 September 2019.

6.2 Pre-application Consultation

In addition to Scoping, a Pre-Application Meeting took place with THC in May 2019 to discuss the early stages of the Proposed Development.

Further engagement has been undertaken with relevant statutory and non-statutory consultees since receipt of the 2019 Scoping Opinion, notably the ECU, THC, NatureScot, and SEPA. This included direct consultation, and submission of a Gatecheck 1 Report to the ECU in November 2020 detailing how comments raised within the Scoping Opinion were to be addressed within the EIA Report.

6.3 Public Consultation

The Applicant has consulted widely with the general public/local community on the Proposed Development, including holding community consultation events. Full details of all the public consultation that has been undertaken can be found within the Pre-Application Consultation Report. Due to Scottish Government regulations regarding public gatherings during the COVID-19 pandemic, it was not possible to host a programme of on-site public events to facilitate consultation with public stakeholders. A series of alternative measures were instigated to ensure community organisations and members of the public were provided with information on the Proposed Development and opportunities to provide feedback.

6.3.1 Public Exhibitions

An initial public exhibition had been scheduled to be held in Spring 2020 at venues located within the boundaries of each of the three community council areas identified as core consultees: Fort Augustus & Glenmoriston; Glen Urquhart and Strathglass. It was not possible to proceed with these exhibitions due to Scottish Government restrictions on public gatherings during the COVID-19 pandemic.

Following consultation with the community councils, it was agreed that the information that would have been presented at the public exhibitions in Spring 2020 would be published to a Bhlaraidh Wind Farm Extension section of the Applicant's website. A postcard, providing a summary of the Proposed Development

and details of how to access the web space, was distributed via mail to household and business addresses within the three community council areas in June 2020.

A second programme of public exhibitions, to provide an update on the Proposed Development, had been scheduled to take place in Spring 2021. Continuing Scottish Government restrictions on public gatherings prevented these exhibitions from taking place on site.

A virtual exhibition space was created to provide a digital representation of an exhibition space, displaying information panels, computer-generated renderings, graphics and maps. A Live Chat facility, allowing visitors to the virtual exhibition to participate in a text discussion with representatives of the Applicant, was incorporated in the exhibition space.

An eight-page newsletter, containing information on the Proposed Development and details of how to access the virtual exhibition, was distributed to households and residents in the three community council areas. Invitations were extended via email to constituency MP and MSPs, local authority councillors and community councils within the consultation area.

The virtual exhibition was available for public access from 24 February to 12 March 2021. Live Chat sessions were conducted from 10am to noon on 24, 25 and 26 February. At the request of Glen Urquhart Community Council, further live chat sessions were added on 10 March from 10am to noon and from 2-4pm.

The virtual exhibition was visited by 314 unique users; seven visitors participated in Live Chat sessions with the Applicant's representatives. The average duration of the Live Chat sessions was 30 minutes.

6.3.2 Community Councils

Representatives of the Applicant provided regular updates to the three community councils in the Proposed Development consultation area:

- In August 2019 a copy of the Scoping Report was issued to each community council.
- In November 2019, a representative of the developer issued an invitation via email to attend a future community council meeting to facilitate discussion about the Proposed Development.
- In March 2020, each community council was invited to provide feedback on the most appropriate way to share information about the Proposed Development due to the inability to host public exhibitions. Each community council provided feedback which was used to shape the presentation of information on the Bhlaraidh Extension website.
- In January 2021, community councils were provided with information about the proposed format for virtual exhibitions, scheduled to take place in Spring 2021, and invited to provide suggestions on how to maximise their effectiveness.
- As a result of this consultation, an extended newsletter was issued to 2,213 residential and business addresses within the boundaries of the three community council areas. The extended newsletter provided information and graphics that would be featured in the virtual exhibition as a means of reaching consultees who might not be able to access an online exhibition.
- A copy of the Proposal of Application Notice (PAN) was distributed via email to community councils on 29 March 2021. The email also included an offer to attend a future community council meeting to discuss the Proposed Development in greater detail.
- Representatives of the Applicant attended a meeting of Strathglass Community Council on 12 May 2021.
- Representatives of the Applicant arranged to meet with the chair and committee members of Fort Augustus & Glenmoriston Community Council on 3 August 2021. This meeting was rescheduled for 17 August at the community council's request.

7. Environmental Impact Assessment (EIA)

The EIA considers the likely significant effects of the Proposed Development during construction, operation and decommissioning on the following topics:

- ecology (protected habitats and flora and fauna (excluding birds));
- ornithology (birds and protected bird habitats);
- cultural heritage (direct and setting effects on archaeological features and heritage assets);
- landscape and visual amenity (the character of the landscape and views from agreed locations);
- hydrology, and hydrogeology (surface water and ground water);
- geology and soils (peatland, rocks and soils);
- noise (local properties);
- traffic and transport (traffic travelling to, and from, the Proposed Development);
- socio-economics, tourism and recreation (effects to the local and national economy, local tourism businesses, and recreation facilities);
- climate change (calculation of carbon balance); and
- aviation and radar (civil and military aviation facilities and air space).

Chapter 3 of the EIA Report describes the EIA process in more detail.

For each topic, the existing conditions (the baseline) were identified, the effects of the Proposed Development on these conditions were assessed (the likely effects), and standard best practice mitigation measures for those receptors were identified if necessary. Likely effects are assessed to determine which are significant and on what scale. Mitigation measures have then been proposed to minimise or avoid adverse effects where required. Following this an assessment was undertaken of the effects of the Proposed Development on the existing conditions taking into consideration the proposed mitigation measures (the residual effects) to identify significant and non-significant effects. An assessment of the cumulative effects of Proposed Development in combination with other existing and proposed developments in the local area, primarily wind farms, was also undertaken.

A summary of the baseline conditions, the proposed mitigation measures and the resulting residual effects for each topic is provided below. Full details of the EIA for each of the topics are provided in Chapters 5 to 15 of the EIA Report.

7.1 Ecology

Chapter 5 of the EIA Report provides an ecological impact assessment and considers the potential impacts and their resulting effects on ecological features, such as designated nature conservation sites, habitats and protected species in line with best practice guidance.

The field study area, which included the full area within the Site boundary and a buffer area of up to 250m beyond the Site boundary, was surveyed in 2019 and 2020 to provide baseline information on habitats and protected species.

Habitat surveys identified that the dominant habitats on the Site are wet heath, blanket bog and wet modified bog. Groundwater Dependent Terrestrial Ecosystems (GWDTEs) are wetland areas which critically depend on groundwater characteristics, and seven potential areas of GWDTEs were recorded. However, following detailed consideration by hydrology and ecology experts, it is considered that these seven areas are unlikely to be groundwater dependent in the setting of the Site and they are therefore not a significant constraint to the Proposed Development.

Protected species surveys identified the presence of two terrestrial mammal species: otter and water vole as well as five bat species: common pipistrelle, soprano pipistrelle, brown long-eared bat, Daubenton's bat and Natterer's bat. The species recorded are common and widespread throughout the desk and field study area.

Fish studies identified that brown trout and three-spined stickleback are likely to be the only native fish species present in the field study area, with common minnow likely introduced by anglers. Brown trout population density was variable across the field study area and ranged from very poor to excellent by regional standards.

The ecology assessment concludes that no significant residual effects are predicted following the implementation of proposed mitigation, including:

- a Deer Management Plan;
- a Habitat Management Plan including habitat restoration and enhancement;
- an Ecological Clerk of Works (ECoW) overseeing construction activities;
- fish monitoring and remediation;
- a Construction Environmental Management Plan; and
- pollution prevention measures.

The full assessment of effects is provided in Chapter 5 of the EIA Report.

7.2 Ornithology

Chapter 6 of the EIA Report provides an assessment of the potential effects associated with the Proposed Development on ornithology (bird life) features present.

Field surveys were conducted from 2018 to 2020, in order to determine the current breeding and non-breeding assemblage within the study area. Ornithological baseline, pre-construction and post-construction surveys have taken place for the Operational Development adjacent to the Proposed Development site since 2009 and the assessment therefore utilises relevant long-term data as well as the 2018-2020 survey results.

In general, the bird assemblage recorded in 2018-2020 was consistent with results of surveys undertaken for the Operational Development. Red-throated diver, black grouse, greenshank and golden plover were all recorded within the Site and wider study area during the breeding season, and the Site overlaps with an occupied golden eagle territory, although no breeding attempts have been recorded to date. Slavonian grebe is present in the wider study area, and although there were no records within the Site during baseline surveys, potential effects on the species were assessed.

The ornithological assessment identified potential impacts as habitat loss and disturbance during the construction and decommissioning phases, and displacement, collision risk effects during the operational phase. Without mitigation, impacts on ornithological features were assessed as being at worst minor adverse and not significant, with the exception of black grouse where disturbance from construction activities was predicted to have an unmitigated moderate adverse effect.

Mitigation measures to ensure that lekking black grouse (i.e. communal breeding displays) are not disturbed during the construction and decommissioning periods allowed the residual effect to be reduced to minor adverse and not significant. Proposed mitigation measures include implementation of a Breeding Bird Protection Plan, pre-construction monitoring and habitat enhancement as part of a Habitat Management Plan.

The potential cumulative effects of the Proposed Development and other wind farm projects on populations of golden eagle and greenshank were considered to be unchanged compared to that for the Proposed Development alone (minor adverse and not significant).

The ornithology assessment concludes that, following the implementation of mitigation, no significant residual effects are predicted. The full assessment of effects is provided in Chapter 6 of the EIA Report.

7.3 Archaeology & Cultural Heritage

Chapter 7 of the EIA Report assesses the potential for settings effects on heritage assets resulting from the operation of the Proposed Development.

It was agreed with THC Historic Environment Team that an assessment of the potential for direct effects upon archaeological remains during the construction phase would not be required due to the lack of heritage assets, or potential thereof, within the Site.

Potential operational effects on the settings of designated heritage assets, due to the visibility of the Proposed Development, within the 5km and 10km Study Areas and Urquhart Castle within 15km of the Site have been considered in detail as part of this assessment. No significant effects have been predicted upon the setting of such assets. Therefore, no mitigation measures are deemed to be necessary.

The possibility of cumulative effects has been considered and assessed and no significant cumulative effects are expected.

The full assessment of effects is provided in Chapter 7 of the EIA Report.

7.4 Landscape & Visual

Chapter 8 of the EIA Report assesses the potential landscape and visual effects of the Proposed Development.

A landscape and visual impact assessment has been undertaken in accordance with best practice guidance. This has considered the potential landscape effects of the Proposed Development, on landscape character and designated and protected landscapes, and the potential visual effects of the Proposed Development, on visual amenity of receptors present within the landscape, including those in residential areas, on routes, and in recreational areas within a 45km study area.

The assessment of potential landscape effects has considered Landscape Character Types identified by NatureScot and designated and protected landscapes, including, in particular, National Scenic Areas, Wild Land Areas, and Special Landscape Areas. The assessment concluded there would be no significant landscape effects to any of these areas as a result of the Proposed Development.

The assessment of potential visual effects has considered views from visual receptors at 26 representative viewpoints, in residential areas within 25km of the Proposed Development, and on transport and recreational routes. There would be no significant visual effects for the majority of receptors. However, significant visual effects would be anticipated during construction and operation for a small number of receptors within a localised area, largely contained within 9-11km of the Proposed Development, on the eastern side of Loch Ness in the Stratherrick area and along or near the B862 road.

The cumulative landscape and visual impact assessment considered the cumulative landscape and visual effects of the Proposed Development when seen in addition to other existing and proposed wind farm developments. The cumulative assessment considered two baseline scenarios: one with consented and one with consented and proposed wind farms developments. For both scenarios it concluded that there would be no significant cumulative landscape effects as a result of the Proposed Development and significant cumulative visual effects would be limited to receptors at Viewpoint 7 “B862 south of Foyers” and for a small number of receptors in the vicinity (localised within a residential grouping).

Overall, the landscape and visual assessment has concluded that the Proposed Development would result in no significant landscape effects and a very limited extent of significant visual effects, affecting receptors in localised areas to the east of Loch Ness, along the B862 road, between 9-11km from the Proposed Development. Outwith this area, landscape and visual effects would not be significant. The full assessment of effects is presented in Chapter 8 of the EIA Report.

7.5 Hydrology & Hydrogeology

Chapter 9 of the EIA Report assesses the potential effects of the Proposed Development on hydrology and hydrogeology.

Site survey work has been undertaken in two phases to inform this assessment and the design layout. The baseline hydrology and hydrogeology of the Site has been established through a desk study and survey work. The Site features numerous watercourses and water bodies. The majority of the site drainage is anticipated to flow to the watercourse Allt Saigh, either directly or via the Allt Carn Choire Rainich or smaller unnamed watercourses. The west of the Site is included within the Allt Bhlaraidh catchment. The Site extends into the River Moriston catchment in the south. However, the large majority of the Site area is assessed as not being in hydraulic connectivity to the River Moriston. The River Moriston is also a Special Area of Conservation (SAC). The potential flood risk to the Site is considered to be low.

The hydrogeology at the Site comprises low productivity bedrock aquifers. It is anticipated that there is an absence of substantial groundwater within the superficial deposits in the main body of the Site where the turbines are located. There may be potentially localised groundwater within areas of glacial and glaciofluvial deposits with higher proportions of sand and gravel content in the south which are located along the existing access track and at the proposed construction compound location.

As noted in the Ecology section above, it is considered that any potential Ground Water Dependent Terrestrial Ecosystems at the Site are not actually dependent on groundwater but are instead fed by surface water run-off and incident rainfall.

Identified Private Water Supplies (PWSs) have been considered in this assessment and it is considered that all groundwater sourced PWSs are sufficient distance from the Proposed Development and given the geological site setting there is no risk to these supplies. All surface water sourced PWSs are in continuity with the Proposed Development with respect to hydraulic continuity and / or locality to the existing access track, however, they are located at least 1,000m from any proposed infrastructure, therefore with the implementation of appropriate mitigation there will be no significant effect.

Mitigation includes 'embedded' (or 'designed-in') mitigation e.g. existing tracks have been incorporated into the site design as far as possible, the number of watercourse crossings has been minimised as far as reasonably possible and a 50m buffer has been maintained around all surface watercourses shown on Ordnance Survey 1:50,000 scale mapping, with some exceptions where proposed tracks cross watercourses. During the construction phase good practice measures will be in place to avoid or minimise the pollution impact from silt-laden run-off and chemical contaminated run-off and a water quality monitoring programme will be implemented to record the existing water condition and ensure no deterioration to water quality during construction. Mitigation will also be in place to reduce the impact of the construction phase on the integrity of access track embankments. During the operational phase, water quality mitigation measures will be included as part of the permanent drainage design and run-off from the Site will be managed and monitored as part of an Operational Environmental Management Plan.

The hydrology and hydrogeology assessment concludes that, following the implementation of mitigation, no significant residual effects are predicted. The full assessment of effects is provided in Chapter 9 of the EIA Report.

7.6 Geology & Soils

Chapter 10 of the EIA Report considers the effects of the Proposed Development on geology and soils.

Baseline conditions were identified through desk-based assessment, consultation and field survey, including peat depth probing surveys. The assessment undertaken has identified the presence of sensitive geological receptors within the Site, namely areas of nationally important carbon rich soils with priority peatland habitat.

Peat deposits are present across the majority of the Site. Bedrock across the Site comprises psammite with micaceous layers and calc-silicate pods of the Upper Garry Psammite Formation in the west of the Site (also

known as Tarvie Psammite Formation), and psammite and semipelite of the Achnaconeran Striped Formation in the east of the Site.

Potential effects in relation to geology are most likely during construction and may relate to effects on peat stability and effects as a result of excavation. As part of the Proposed Development design, the disruption of peat has been minimised by avoiding areas of deep peat deposits as far as practicable, and the re-use of excavated peat would be maximised in accordance with best practice management. This has been achieved by the early use of a 3D design model, and modification of the design layout to avoid placement of infrastructure in areas of deeper peat.

Proposed mitigation measures following best practice measures include a Geotechnical Risk Register, appropriate drainage design, pre-construction ground investigations and management of excavated peat through a Peat Management Plan.

With the implementation of appropriate mitigation measures, all residual effects would be negligible and not significant. The full assessment of effects is provided in Chapter 10 of the EIA Report.

7.7 Noise

Chapter 11 of the EIA Report provides a noise assessment to determine the likely significant noise effects from the Proposed Development.

Due to the separation distances between noise assessment locations and construction activities, a construction noise assessment was not required. Nevertheless, a range of good practice measures would be detailed within the Construction Environmental Management Plan to minimise noise during construction, and would include defined construction working hours and appropriate management of vehicles and mechanical plant.

A detailed assessment considered the operational phase noise levels of the Proposed Development.

A background noise survey was undertaken at two noise monitoring locations as part of the pre-construction noise assessment for the Operational Development. The data has been reanalysed in conjunction with on-site measured wind speed data and noise limits have been derived in accordance with relevant industry guidance.

At receptors where background noise monitoring was not undertaken, the simplified assessment methodology detailed in standard guidance was adopted for the assessment. A total of three Noise Assessment Locations were chosen to be representative of the residential properties (noise sensitive receptors) surrounding the Proposed Development.

The noise assessment has been undertaken in three stages, which involved setting the Total Noise Limits (which are limits for noise from all operational, consented and proposed wind farms in the area) at the nearest noise sensitive receptors, predicting the likely effects of the Proposed Development (undertaking a cumulative noise assessment where required) and setting Site Specific Noise Limits for the Proposed Development.

The use of Site Specific Noise Limits will ensure that the Proposed Development can operate concurrently with other operational wind farms in the area and will also ensure that the Proposed Development's individual contribution could be measured and enforced if required.

Predicted cumulative operational noise levels indicate that for noise sensitive receptors neighbouring the Proposed Development, cumulative wind turbine noise (which considers noise predictions from all nearby operational wind farms and the Proposed Development) would not exceed the Total Noise Limits at all Noise Assessment Locations.

Predictions of wind turbine noise from the Proposed Development have been made in accordance with good practice using a candidate wind turbine model. The candidate wind turbine model was chosen in order to allow a representative assessment of the noise impacts. Should the Proposed Development receive consent,

the final choice of wind turbine would be subject to a competitive tendering process. The final choice of wind turbine would, however, have to meet the Site Specific Noise Limits presented in this assessment.

Predicted operational noise levels from the Proposed Development indicate that for residential properties neighbouring the Proposed Development, wind turbine noise from the Proposed Development would not exceed the Site Specific Noise Limits, therefore the operational noise impact is not significant. The full assessment of effects is provided in Chapter 11 of the EIA Report.

7.8 Traffic & Transport

Chapter 12 of the EIA Report examines the transport and access issues associated with the Proposed Development.

The assessment considers the impacts during the construction phase of the Proposed Development, when volumes of traffic generation are anticipated to be at their greatest due to the delivery of equipment and construction materials. The operational phase of the Proposed Development is not anticipated to have any significant adverse impacts on the public road network as a result of the low levels of traffic that are forecast.

The study area has been identified through a review of the likely routes between suppliers of equipment and materials and the site. It includes:

- A82 between Inverness and Fort William;
- A87 between Invergarry and Kyle of Lochalsh; and
- A887 between Bunloyne and Invermoriston.

The existing road usage across these routes was identified using annual average daily traffic flow data and future baseline traffic flows predicted.

It is proposed that all abnormal turbine loads will originate from either Kyleakin/Kyle of Lochalsh or Inverness and would route via the A82/A87 to reach the site access on the A887.

Standard mitigation measures will include the implementation of a Construction Traffic Management Plan for general construction traffic and a Traffic Management Plan for abnormal loads.

The maximum traffic movements associated with construction of the Proposed Development are predicted to occur in months 7 to 9 of the programme when aggregate and sand deliveries associated with on-site concrete production are predicted to coincide with the commencement of turbine deliveries.

Traffic volumes as a result of construction activities are likely to increase on the public roads approaching the Site including the A82/A87/A887. However, neither total traffic flows, nor heavy goods vehicles traffic flows, are predicted to increase the baseline level of traffic by more than 30% at any location on the A82/A87/A887 and therefore are not considered to be a significant effect.

The cumulative assessment considered the impact of the Proposed Development with Cloiche, Glenshero and Millenium South Wind Farms, under the worst-case scenario, with the assumption that the peak periods of the respective construction programmes would overlap (which, in reality, is unlikely).

The assessment concluded that when considering the cumulative construction phases, total traffic increases on all routes within the study area, total traffic flows would not increase by more than 30% at any location on the A82/A87/A887 although heavy good vehicles traffic volumes would increase by more than 30% on the A82 north of Invergarry and south of Invermoriston. When considering the theoretical worst case overlap of the peak periods associated with the construction programmes of other developments within the cumulative assessment, the effects are not considered to be significant. However, in the unlikely event of peak construction activities overlapping, further mitigation measures would be introduced to minimise conflicts between construction traffic and road use in Fort Augustus.

The full assessment of effects is provided in Chapter 12 of the EIA Report.

7.9 Socio-economics, Recreation &Tourism

Chapter 13 of the EIA Report provides an assessment of the potential socio-economic, tourism and recreation effects of the Proposed Development.

The baseline assessment found that the ward of Aird and Loch Ness has a relatively older population than Highland and Scotland, with slower population growth expected. Economic activity in Highland is higher than the Scottish average and wages are comparable, but the share of the population of working age both in Aird and Loch Ness and in Highland is relatively smaller than the Scottish average. The sustainable tourism sector in the Great Glen and wider Highland area is an important employer and visitors come from all over the world to see Loch Ness. The sector in the Local Area tends to have a seasonal character, with less to no activity in the winter months.

The analysis of economic impacts estimated that:

- during the development and construction phase, the Proposed Development would cost approximately £99 million and could generate up to:
  - £14.4 million (Gross Value Added (GVA)) and support 196 years of employment in Highland; and
  - £36.6 million (GVA) and support 494 years of employment in Scotland as a whole.
- during each year of the operational phase, annual expenditure on operations and maintenance would be £2.7 million and could generate up to:
  - £0.8 million (GVA) and support 11 jobs in Highland; and
  - £1.6 million (GVA) and support 26 jobs in Scotland.

It is expected that there would be a community benefit fund associated with the Proposed Development, which will build on the existing Bhlaraidh Community Fund.

There would also be benefits to the public sector from the annual payment of around £1.3 million in non-domestic rates. This revenue will contribute to the delivery of local public services.

A review of the latest research suggests that there is no evidence of wind farm developments adversely affecting the tourism economy of Scotland. Nevertheless, an assessment of the potential effect of the Proposed Development on local tourism assets, accommodation providers and tourism routes was undertaken and found no expected adverse effects.

The assessment found a minor beneficial effect on the economy of Highland during construction phase; otherwise all other effects on socio-economics, tourism and recreation were assessed to be negligible.

The full assessment of effects is provided in Chapter 13 of the EIA Report.

7.10 Climate Change

Chapter 14 of the EIA Report details the assessment to work out carbon dioxide (CO_2) emissions from the Proposed Development.

This assessment estimates the CO_2 emissions associated with the manufacture and construction of the Proposed Development as well as estimating the contribution the Proposed Development would make to reducing CO_2 emissions by displacing conventional electricity production, to give an estimate of the whole life carbon balance of the Proposed Development. Each unit of wind generated electricity would displace a unit of conventionally generated electricity, therefore, reducing traditional power station emissions.

The assessment utilises the Scottish Government's Online Carbon Calculator Tool which allows a range of data to be input to address the expected, minimum and maximum values as a result of the Proposed Development.

The Proposed Development is expected to take around 30 months (2.5 years) to repay the carbon exchange to the atmosphere (the CO_2 debt) through construction of the wind farm. There are no current guidelines about what payback time constitutes a significant effect. However, this is a small percentage (5.0%) of the 50-year lifespan of the Proposed Development (based on the lifespan used in the carbon calculator).

Compared to fossil fuel electricity generation projects, which also produce emissions during the construction phase and significant emissions during operation due to combustion of fossil fuels, the Proposed Development has a very low carbon footprint and, after 2.5 years, the electricity generated is estimated to be carbon neutral and will displace grid electricity generated from fossil fuel sources. The Site would in effect be in a net gain situation following this time period and will then be contributing to national objectives of reducing greenhouse gas emissions and meeting the Scottish 'net zero' carbon targets by 2045. Therefore, the Proposed Development is evaluated to have an overall beneficial effect on climate change.

The full assessment of effects is provided in Chapter 14 of the EIA Report.

7.11 Aviation & Radar

Chapter 15 of the EIA Report addresses the potential effects of the Proposed Development on aeronautical radar and radio navigation aids, meteorological radars and low flying aircraft.

The Site is located in uncontrolled airspace, beyond the Civil Aviation Authority recommended consultation distances from all aviation facilities. Radar line of sight assessment has determined that the Proposed Development will not be visible to Inverness Airport or RAF Lossiemouth radars due to intervening terrain.

The Proposed Development has the potential to present an obstruction hazard to low flying aircraft. This is mitigated by promulgation of data on the locations and heights of the turbines on aeronautical charts and in aeronautical information publications.

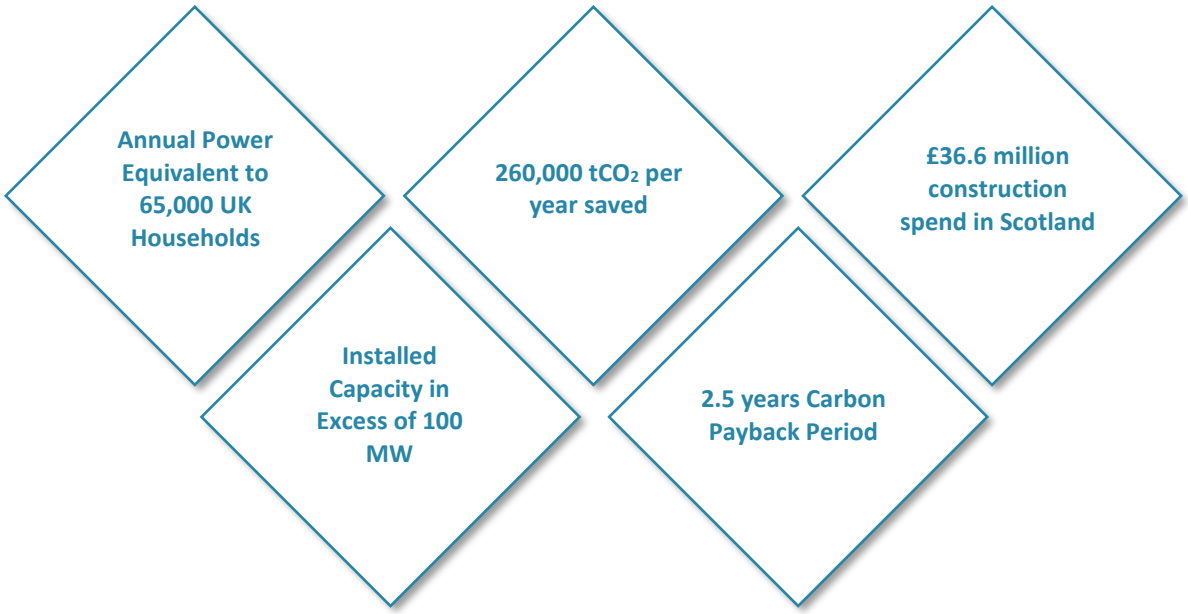
The assessment found that the Proposed Development will not be within line of sight of any radars and that it will not have a significant effect on the obstacle hazard to low flying aircraft. An aviation obstruction lighting scheme, consisting of infra-red lights to mark the perimeter of the Proposed Development, has been approved by the Civil Aviation Authority.

The assessment found that all potential residual and cumulative effects to be not significant.

The full assessment of effects is provided in Chapter 15 of the EIA Report.

8. Benefits of the Proposed Development

The Proposed Development will deliver the following key benefits:



9. Conclusion

This Non-Technical Summary of the EIA Report provides an overview of the EIA undertaken for the Proposed Development on Glenmoriston Estate, near Invermoriston, Highlands.

Within Chapter 16 of the EIA Report, a schedule of environmental commitments can be found which details the environmental mitigation measures which the Applicant has committed to implement. Chapter 17 of the EIA Report summarises the likely environmental effects, the relevant mitigation to be implemented and the resulting residual effects.

The final layout has been informed by a robust EIA and lengthy design iteration process, considering potential environmental impacts and their effects, physical constraints, and health and safety considerations. The information used to inform the design iteration process included consultation responses received, baseline data and the impact assessment undertaken.

Overall, the Proposed Development is an appropriately designed, and sensibly located wind farm which is in line with policies in the local and strategic development plans and conforms to national policy. The Proposed Development has been designed to maximise energy production within acceptable environmental limits. The Proposed Development will provide a valuable contribution towards the ambitious national targets for electricity generation from renewable sources and contribute towards sustainable economic growth in the Highlands and Scotland as a whole.

ITPENERGISED

ITPEnergised is a leading, international consultancy offering renewable energy, natural resources, environmental, engineering, technical advisory and asset management services for clients with onshore and offshore projects.

Visit the ITPEnergised group offices in:

Bristol, London, Edinburgh, Glasgow, Buenos Aires, Lisbon, Madrid, Delhi, Beijing, Canberra, Auckland

Sectors:

Onshore Renewables & Storage | Offshore Renewables | Oil & Gas
Property & Urban Regeneration | Infrastructure | Corporate, Industrial & Manufacturing