Beaufort Wind Limited

Beinn Ghlas Wind Farm Repowering

Environmental Impact Assessment Report

Non-Technical Summary

663547

JULY 2025

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Project No.: 663547-3 (00)

Title: Beinn Ghlas Wind Farm Non-Technical Summary (Volume 1)

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1 INTRODUCTION

1.1 Background to the Non-Technical Summary

1.1.1 This is the Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report for the proposed Beinn Ghlas Wind Farm Repowering project (hereafter the 'Proposed Development'). The EIA Report is the main document accompanying the application for consent and the NTS will summarise its key findings.

1.1.2 The NTS describes the Proposed Development in non-technical language and identifies the likely effects it may have on people and the environment. It also describes the mitigation measures proposed to avoid or reduce potential adverse effects that have been identified. It will also discuss how environmental matters will be managed during the construction, operation and decommissioning phases of the Proposed Development.

1.2 Introduction to the Proposal

1.2.1 The United Kingdom (UK) and the Scottish Government has declared a climate emergency and set ambitious and legally binding climate change targets with a net-zero carbon dioxide (CO_2) target for 2045 in Scotland. It is therefore, important to accelerate growth in the renewable energy sector.

1.2.2 The Proposed Development will comprise of up to 7 turbines of up to 149.9 m to tip and associated infrastructure, with a generating capacity of between 30-40 MW. These turbines will replace the existing 14 operational turbines of approximately 54.1 m to tip which have a total installed capacity of 8.4 MW and will be decommissioned and removed, in parallel with, or prior to, the construction of new turbines. The Application Site is located on the undulating uplands around Carn Gaibhre to the east of Beinn Ghlas summit on the Barguillean Estate near Taynuilt in the Argyll and Bute Council (A&BC) local authority area, centred at approximately Ordnance Survey (OS) Grid Reference NM 977 258 (see **Figure 1** for site context).

1.2.3 This EIA Report has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 to support the planning application submitted to the Argyll and Bute Council (A&BC) for the Proposed Development.

1.3 Repowering explained

1.3.1 Repowering is the process to replace older first-generation wind turbines with more powerful models that use the latest technology and are capable of producing significantly more electricity, and more efficiently.

1.3.2 With regards to the Proposed Development, the existing Beinn Ghlas Wind Farm would be repowered through dismantling the current turbines and installing fewer turbines to generate more power.

1.3.3 In addition, repowering existing schemes provides the opportunity for maximising land use through ecosystem enhancement and restoration (e.g. forestry/peatland), re-using

existing infrastructure where possible and increasing the economic benefits afforded to local communities.

1.4 The Applicant

1.4.1 Beaufort Wind Limited (hereafter referred to as "the Applicant") is the owner of the existing Beinn Ghlas Wind Farm and is a wholly owned subsidiary of Nadara Limited (hereafter referred to as Nadara). Nadara is one of the largest European independent renewable power producers and was formed by the coming together of Ventient Energy and Renantis in January 2024. Nadara designs, builds and manages power plants from renewable energy sources, with an installed capacity of more than 4.2 Gigawatts (GW) across 200 plants globally. Nadara companies have been operating in the UK since 2002 with offices in Inverness, Edinburgh and London and operates 45 onshore wind farms (>1.1 GW) in the UK.

1.4.2 Nadara will work closely with local communities, businesses and residents to ensure the repowering of Beinn Ghlas Wind Farm brings real benefits to the local area while helping to meet national climate change and renewable energy targets and goals.

1.4.3 To date, the community benefit fund for the existing wind farm has resulted in a wide range of local projects being delivered from environmental improvements such as funding several community gardens, set up of a senior arts club, buying equipment and supporting venue hire for local groups and installation of defibrillators. Should the Proposed Development be consented, the Applicant is committed to setting up a community benefit fund which could deliver approximately £5.9 million over the lifetime of the Proposed Development.

1.4.4 The Applicant has appointed RSK Environment Ltd (RSK), an experienced environmental consultancy, as lead consultant to carry out an Environmental Impact Assessment (EIA) and related assessments to accompany a Town and Country Planning Application to A&BC. RSK is a fully integrated, environmental, health, safety and engineering consultancy with extensive experience of providing environmental, health, safety and engineering services to the renewable energy onshore sector.

1.5 Project Team

1.5.1 RSK has been supported by a host of suitably competent specialists as shown in **Table 1.1** below.

Table 1.1 EIA team responsibilities and competency

Name, company and role	Qualifications	Years of Experience
EIA project management team		
Joe Somerville	MA, MSc MCIfA FSA Scot PIEMA	15 years
Robert Beck	BA (Hons),MEnvS PgDip MIEMA CEnv	20 years
Adam Paterson	BSc, MSc, PIEMA, REnvP	4 years
EIA technical specialists		
David Bell, David Bell Planning - Planning	BSc DipUD MCIHT MRTPI, BSc Town & Country Planning, Diploma in Urban Design, Chartered Town Planner, Corporate Member of the Royal Town Planning Institute, Chartered member of the Institute of Highways & Transportation.	31 years
Frances Horne, Pegasus - Landscape and Visual Impact Assessment	BA (Hons); PGDipLA, PGDipUED CMLI	21 years
Dale Turner, Pegasus - Landscape and Visual Impact Assessment	BSc (Hons); MSc, AIEMA	17 years
Kate Massey, Alba Ecology - Ecology	BSc (Hons), MSc, PhD, MCIEEM	14 years
Blair Urquhart, NRP - Ornithology	Diploma in Conservation Management	25 years
Duncan Saunders, Fluid Consulting - Hydrology, Geology and Hydrogeology	BSc (Hons), MSc; Chartered Institute of Water and Environmental Management, Chartered Scientist	29 years
Owen Raybould, Headland Archaeology - Archaeology and Cultural Heritage	BSc (Hons), MCIfA, IHBC	16 years

Name, company and role	Qualifications	Years of Experience
Jon Hassel, SCP RSK Transport Planning - Traffic and Transport	BEng (Hons); Chartered member of the Institution of Highways and Transportation, Transport and Planning Society member.	30 years
Matthew Cand, Hoare Lea - Noise and Vibration	Dipl Eng, PhD; Member of the Institute of Acoustics	17 years
Graeme Blackett, Biggar Economics - Socio-economics	BSc (Hons); Member of the Institute for Economic Development, Member of the Economic Development Association Scotland	32 years
Ian Fletcher, Wind Business Support - Aviation and Radar	BEng (Hons)	32 years
Wayne Scurrah, RSK ADAS - Forestry	DDF	34 years

2 PLANNING PROCESS

2.1 Consents and Applications

2.1.1 The Applicant is seeking to secure approval for the Proposed Development by an application in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations'). The Environmental Impact Assessment Report ('the EIA Report') presents information on the identification and assessment of the likely significant positive and negative environmental effects of the Proposed Development.

2.2 Requirements of the EIA Regulations

2.2.1 The approach to this EIA has followed the requirements of the EIA Regulations. Regulation 4 of the EIA Regulations defines the process of EIA and highlights the factors and their interactions that should be considered. Regulation 5 sets out the minimum requirements for an EIA Report, and notes that where a Scoping Opinion is issued the EIA must be prepared based on that Scoping Opinion.

2.3 EIA and the Design Process

2.3.1 The EIA was conducted as an iterative process, rather than a one-off, post design environmental appraisal. This has allowed the findings of the EIA to be fed into the design process, to avoid, reduce and where possible, mitigate environmental effects. Where potentially adverse environmental effects were identified through preliminary investigations as part of feasibility work, or later in the detailed EIA, consideration was given as to how the scheme design could be modified to design out adverse environmental effects, or where this was not possible, to identify appropriate mitigation.

2.4 Determining the Scope of the EIA Report

2.4.1 This EIA Report is the independent assessment of the likely significant environmental effects arising as a result of the Proposed Development, and the measures proposed to avoid, reduce and where possible mitigate significant adverse effects.

2.4.2 The scope of this EIA Report has been established through baseline collection and research, reference to standard and best practice guidance in relation to onshore wind projects (e.g. that produced by the Scottish Government, NatureScot, Scottish Environment Protection Agency (SEPA), Historic Environment Scotland (HES) and Institute of Acoustics (IOA)), as well as experience of similar projects and professional judgement.

2.4.3 Any proposal to construct or operate a power generation scheme with a capacity in excess of 50 (Megawatts) MW requires Scottish Ministers' consent under Section 36 of the Electricity Act 1989. Whilst not a statutory requirement, as part of the EIA process, the Applicant sought a formal scoping opinion from the Scottish Government Energy Consents Unit (ECU) on behalf of the Scottish Ministers under the EIA regulations in June 2022 for a project comprising up to 18 wind turbines exceeding 50 MW.

2.4.4 The Scoping exercise involved a review of available documentation, consultation with statutory and non-statutory organisations, desk-based and site-based surveys. The Energy Consents Unit (ECU)[1] issued a Scoping Opinion in October 2022 and a Scoping Opinion Addendum in May 2023, which included feedback from consultees.

2.4.5 The Scoping process concluded that the following aspects would require further assessment, in the form of an EIA, due to their potential to cause environmental effects:

- Landscape and Visual Impact Assessment;
- Ecology;
- Ornithology;
- Hydrology, Hydrogeology, Geology and Peat;
- Cultural Heritage;
- Traffic and Transport;
- Noise and Vibration;
- Socio-economics; and
- Other Issues:
  - Telecommunications and Electronic Interference;
  - Climate Change; and
  - Aviation and Radar.

2.4.6 In March 2025 following further site design work and consideration of ornithology mitigation, the scale of the Proposed Development was reduced from the 12 turbines presented at the January 2023 public exhibitions to 7 wind turbines at up to 149.9 m to tip.

2.4.7 As the capacity of the Proposed Development would be less than 50 MW, the planning application has been submitted to A&BC as opposed to the ECU and the EIA Report has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

Consultation Overview

2.4.8 Consultation has been integral to the design and development of the Proposed Development, the identification of existing environmental constraints and sensitivities, and the identification and assessment of likely environmental effects of the Proposed Development.

2.4.9 Consultation with statutory organisations, non-statutory organisations and the general public commenced in July 2022, following the publication of the Scoping Report, and has taken a number of forms, including:

- Stakeholder liaison;
- Public information events;

[1] Submitted to ECU as application was more than 50 MW

- Informal discussions; and
- Gatecheck report (part of previous s36 process).

2.4.10 Further detail regarding the public exhibition events and the consultation requirements for the Proposed Development has been provided in the Pre-Application Consultation (PAC) Report, supplementary to the EIAR. The PAC has been submitted with the planning application and describes the consultation requirements for the Proposed Development, the consultation measures undertaken by the Applicant, the feedback received and any resulting modifications to the Proposed Development.

2.4.11 The PAC report identifies the relevant national and local policy as well as the approach that the Applicant has taken to inform and consult with the local community and other stakeholders throughout the project timeline.

2.4.12 The Applicant has responded to all email/feedback queries raised throughout the Public Exhibition process (in line with General Data Protection Regulations (GDPR) requirements) and all comments made have been considered as part of the proposed application.

2.5 Approach to EIA

As outlined below, an EIA is a systematic process which is undertaken to identify, predict and evaluate the environmental effects of proposed developments. It should be noted that for the Proposed Development, different technical assessments adopt this same broad approach, but vary in the detail of how they are applied, such as study areas, established guidance or assessment criteria.

Existing Environment

Baseline studies including desk-based research and field surveys have been completed in order to collect data relating to the characteristics of the existing environment. This enabled the identification of environmental sensitivities that could be affected by the Proposed Development.

Potential Impacts

The characteristics of the Proposed Development, including the project infrastructure, construction, operation and decommissioning activities, and Schedule of Mitigation, have been considered to identify potential impacts on the existing environment.

The following types of impacts have been considered within the EIA:

- direct impacts which may occur when some aspect of a development physically impinges upon a valued resource, for instance the proposed construction of a turbine may result in the loss of ecological habitat, or an archaeological site.
- indirect impacts which could occur in either time, or location, from the source; for instance construction works on a slope could result in heavy rainfall washing exposed soil into a nearby watercourse, which could affect aquatic life.
- cumulative impacts are defined as:
    - impacts that result from changes caused by a proposed development, together with other past, present or future developments; and

- impact interactions that may arise from a combination of separate impacts on one or a small number of receptors, due to the same proposed development.

Residual Effects

Following the assessment of identified potential impacts, additional mitigation measures were identified, where necessary, to eliminate, minimise or manage the potential environmental effects.

The significance of residual effects, the environmental effects that remain after mitigation measures have been considered, has been presented in the findings of the EIAR.

Any significant residual effects that the EIA identifies are key to understanding the outcome of the EIA process, because these are given the greatest weight by decision makers and stakeholders when considering an application for consent.

2.6 Renewable Energy Policy: Summary

2.6.1 In recent years, UK and Scottish Government policies have focused increasingly on concerns about climate change and the nature crisis. Each tier of Government has developed targets, policies and actions to accelerate deployment of renewable technologies to tackle the climate crisis and generate more renewable energy and electricity. In Scotland in particular, this is reflected in Policy 1 of National Planning Framework 4 (NPF4) which is entitled 'Tackling the climate and nature crises' and which requires that when considering all development proposals that significant weight is given to the global climate and nature crises. At the national level, Scottish Ministers have set a target to have a minimum installed capacity of 20 Gigawatts (GW) of onshore wind in Scotland by 2030.

2.6.2 Whilst the legislative framework for energy consents remains a reserved matter, the Scottish Government in response to climate change have set a clear strategic direction for the deployment of renewable energy through policy and additional legislative provisions.

2.6.3 The UK Government retains responsibility for the overall direction of energy policy, although some elements are devolved to the Scottish Government. The UK Government has published a series of policy documents setting out how targets can be achieved, most recently in the Clean Power 2030 Action Plan published in December 2024 which contains a target of having 30 GW of operational onshore wind in the UK by 2030.

2.6.4 Onshore wind generation, located in Scotland, is identified as an important technology to achieve these various goals as set out in the Onshore Wind Policy Statement (OWPS) (2022) which clearly outlines the socio-economic and environmental benefits of onshore wind and its integral role in tackling climate change. Moreover, it states that "*deployment of onshore wind is mission critical for meeting our climate targets*." The OWPS confirms the Scottish Government target of 20 GW of onshore wind to be operational by 2030.

2.6.5 The Scottish Government has published a number of policy documents and has set its own targets. The most relevant policy, legislative and other documents published by the Scottish Government include:

- The Scottish Energy Strategy (2017);
- The Scottish Government's declaration of a Climate Emergency (2019);

- The Scottish Climate Change Plan Update (2020);
- The Climate Change (Scotland) Act 2009 as amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2024 and the legally binding net zero target for 2045;
- The Onshore Wind Policy Statement (OWPS) (2022);
- The Onshore Wind Sector Deal (2023);
- The Draft Energy Strategy and Just Transition Plan (2023); and
- The Green Industrial Strategy (2024).

2.6.6 The Proposed Development relates to the generation of electricity from renewable energy sources and comes forward as a direct response to national planning and energy policy objectives which seek to encourage, promote and facilitate all forms of renewable energy. The Proposed Development would be consistent with national policy and guidance. The Proposed Development would make a substantial contribution to the attainment of emissions reduction and renewable energy and electricity targets at both the Scottish and UK levels. All of the above documents provide a positive and facilitative framework for the development of renewable energy.

2.7 Conclusions

2.7.1 **Chapter 4: Statutory and Policy Framework, Volume 2** sets out the legislative background, a summary of relevant statutory provisions, the national energy policy framework, and the national and local planning policies and guidance relevant to the consideration of the Proposed Development. It provides an objective summary of the energy and planning policy considerations that have been considered in the preparation of the EIA Report to ensure that it provides the appropriate information for the consideration of the planning application.

2.7.2 A policy appraisal for the Proposed Development is contained in a separate Planning and Sustainable Place Statement. The policy set out in NPF4 and the OWPS requires a rebalancing of the consenting of onshore wind developments in response to the challenges of tackling the climate and nature crises. Having regard to the weight to be ascribed to the important benefits of the Proposed Development, it is considered that the benefits that would result clearly outweigh its adverse effects.

2.7.3 The up-to-date policy set out in NPF4 and the OWPS and the policy being consulted upon in the draft Energy Strategy and the recently published Onshore Wind Taskforce Strategy, provide strong and increased support for the grant of consent.

The conclusion is that the Proposed Development would be in accordance with all relevant policies of the Development Plan - comprising NPF4 and the LDP - and with the Development Plan when read as a whole.

3 PROJECT DESCRIPTION

3.1 Existing Environment

Above: Photograph of the existing Beinn Ghlas Wind Farm

3.2 Site Description and Context

3.2.1 The Site as shown on **Figure 1.1** currently contains the existing Beinn Ghlas Wind Farm comprising 14 wind turbines (approximately 54.1 m to blade tip), each with a capacity of 600 kilowatts (kW) providing an overall installed capacity of 8.4 MW. The Wind Farm has been operational since May 1999. In June 2022, an application to extend the life of the Wind Farm (ref: 21/00870/PP) was approved to allow the Wind Farm to operate to August 2033[2].

3.2.2 The Site comprises low, rugged hills, scattered with small outcrops of rocks and scoured with steep sided streams. There is open moorland, predominantly upland heath and mires including bog pools on the higher ground and a mixture of rough grassland and woodland on the lower slopes.

3.2.3 Within the surrounding area there is a combination of native deciduous woodland and commercial coniferous forestry to the north and southeast of the Site. There is evidence

[2] https://publicaccess.argyll-bute.gov.uk/online-applications/applicationDetails.do?activeTab=summary&keyVal=QRVGM8CHJ6900 (A&BC Reference: 21/00870/PP)

in the wider area of cultivated land and improved grazing but generally the land has been used non-intensively.

3.2.4 A habitat management area was established and remains to the west of the Wind Farm to improve grouse habitat on the Duntanachan Estate. This area was required by Section 75 Agreement as part of the proposal for the Wind Farm in 1998. The purpose was to increase grouse densities on the Duntanachan Estate to encourage the Beinn Ghlas golden eagles away from the Wind Farm area, which would help offset any effects from the Wind Farm on the eagles.

3.2.5 Monitoring surveys continue to be undertaken in relation to the existing habitat management area and the area remains fenced to encourage ongoing enhancements of the habitat to support prey for Golden Eagle.

3.2.6 Areas proposed for habitat enhancement are proposed in the Outline Biodiversity Enhancement and Habitat Management Plan: **Volume 4, Technical Appendix 6.10.**

3.2.7 The nearest settlements to the Site are the town of Oban and village of Taynuilt, which are approximately 12 kilometres (km) and 4 km respectively from the Site. Both are predominantly separated from the Site by a range of hills to the south of Loch Etive.

3.3 Site Selection

3.3.1 There are several criteria used by the Applicant to assess the appropriateness of sites for the development of onshore wind projects. These include:

- suitable wind conditions;
- feasibility of access for abnormal indivisible loads (AIL);
- favourable topography and access to enable the construction of projects;
- planning policies which support the development of renewable energy;
- avoidance of environmental constraints (where possible); and
- avoidance of the most sensitive landscapes.

3.3.2 The Site has already been found to be suitable for a wind farm since 1999 for a range of reasons which included high average wind speed and access to grid infrastructure. The Site is not located within any area of national environmental importance, and through the undertaking of various technical assessments (including but not limited to feasibility assessments, ecology, ornithology, peat and landscape and visual studies since 2020) it was considered that the Wind Farm could be repowered with limited environmental effects.

3.3.3 The Applicant undertook a thorough site design process involving constraints mapping, site visits and continual review of technical, environmental, habitat management and planning considerations. Design iterations have taken place over several years and have developed in response to environmental data, new policies, economic conditions and consultee response and advice. Through balancing site-specific constraints with the scale of development required to be economically viable, the Applicant considers that the Proposed Development provides the best use of the Site with respect to the potential renewable electricity generating capacity achieved through repowering balanced against the potential environmental and other effects.

3.4 Layout and Design Considerations

3.4.1 The design of the Proposed Development has been driven by the objective of positioning the turbines and associated infrastructure so that they capture the maximum wind energy within a suitable area, whilst taking into consideration and minimising potential impacts on environmental and technical constraints where possible.

3.4.2 The key constraints to site design, which were assessed during the design, scoping and pre-application process included:

- Landscape and visual impacts;
- Proximity to residential properties, particularly in relation to noise-sensitive receptors;
- Ground conditions, including slope gradients and peat presence;
- Existing forestry;
- Access feasibility;
- Presence of ornithological interests, protected habitats (including peatland habitats), and sensitive species;
- Local topography, including watercourses, hydrology, and existing land use;
- Presence and safeguarding of cultural heritage features;
- Proximity to telecommunications infrastructure;
- Compatibility with aviation interests;
- Re-use of existing infrastructure as far as practicable; and
- Key recreational and tourism routes.

3.5 Design evolution

3.5.1 The Proposed Development has undergone six principal iterations of the initial layout (Layout A) which have been developed at different stages in the project design process:

- **Layout A** – 20 turbine initial layout, each with a maximum height to blade tip of 180 m, representing a layout which considered basic onsite constraints only.
- **Layout B** – 18 turbine Scoping layout, each with a maximum height to blade tip of 180 m, representing a layout that avoided the northern edge of the site to minimise landscape impact and to avoid ornithology constraints;
- **Layout C** – 14 turbine layout, each with a maximum height of 149.5 m to blade tip, informed by detailed landscape appraisal and early results of onsite surveys and consultant inputs;
- **Layout D** – 12 turbine refined layout with a maximum height of 149.5 m for public consultation informed by the presence of ornithological constraints with a track layout designed to minimise impact on ecological constraints; and
- **Layout E** – 11 turbine refined layout with a maximum height of 149.5 m, including reflecting further baseline environmental surveys, alongside further design of ancillary infrastructure.
- **Layout F** – 7 turbine refined layout with a maximum height of 149.9 m, accounting for protected ornithology species.

3.5.2 Design iterations (A to F) are shown on **Volume 3a, Figure 2.4**.

3.6 Description of the Proposed Development

Key Components

3.6.1 The Proposed Development infrastructure would comprise the following components:

- Up to seven wind turbines of approximately 4.8 MW each, with a maximum blade tip height of up to 149.9 m;
- Hardstanding areas at the base of each turbine, with a permanent area of approximately 1,400 m^2;
- Upgrading of four existing road junctions to support construction and abnormal road traffic;
- Upgrading of forestry tracks from the A85 through Fearnoch Forest, Glen Lonan Road (C32) and existing wind farm access track to accommodate the delivery of abnormal loads to the site and use of existing track for access to the first construction compound.
- An internal network of new onsite access tracks and upgrade of existing Wind Farm access track. The total length of the Site Access and Internal Access Tracks would be approximately 12.83 km of which 2.71 km is new access track (1.6 km floating) with associated new watercourse crossings and 8.52 km is existing access track and watercourse crossings which would need to be upgraded. In total there would be 4 new watercourse crossings and 22 existing crossings;
- Upgrading of the existing onsite sub-station/control building;
- Transformers and underground cables to connect the turbines to the onsite substation;
- Permanent anemometry mast for wind monitoring, including associated foundation and hardstanding;
- Telecommunications equipment;
- Concrete batching plant;
- Preliminary temporary construction compound; and
- Temporary construction compound.

Outline Biodiversity Enhancement and Habitat Management Plan

3.6.2 A number of biodiversity enhancement measures are proposed as part of the Proposed Development's OBE-HMP. The OBE-HMP includes provisions for the protection, maintenance, restoration and creation of habitats locally through the implementation of seven discrete 'objectives' for which work packages and methods have been identified. This is discussed in greater detail in **Technical Appendix 6.10: Outline Biodiversity Enhancement and Habitat Management Plan**.

3.6.3 The infrastructure layout of the Proposed Development is illustrated on **Figure 2 and Figure 3.**

4 ENVIRONMENTAL IMPACT ASSESSMENT SUMMARY

4.1 Introduction

4.1.1 This section outlines the predicted environmental effects of the Proposed Development. Detailed assessments are included in **Chapters 5 – 13 of Volume 2 (Main Text)** of the EIAR.

4.2 Landscape and Visual Assessment

4.2.1 The Landscape and Visual Assessment chapter (**Chapter 5**) considers the potential effects of the Proposed Development on landscape character and people who view the landscape. The assessment takes a precautionary approach to investigate the potential effects on the landscape and visual resources of the Site and the surrounding area during construction, operation and decommissioning. The assessment uses extensive field study, Zone of Theoretical Visibility (ZTV) mapping which show where the Proposed Development would be theoretically visible from and visualisations. The assessment focuses on locations where receptors are likely to be affected by the Proposed Development.

4.2.2 The site does not fall within a National Park, National or Regional Scenic Area (RSA) or Local Landscape Area (LLA).

4.2.3 Within the Landscape and Visual Impact Assessment chapter, the baseline against which the Proposed Development is considered includes other wind farms which are operational, including the existing Wind Farm, but not those which are consented or the subject of a planning application. An assessment of effects has also been made to a potential scenario where the existing Beinn Ghlas turbines are not in the baseline.

4.2.4 As with almost any onshore wind farm development it is recognised that the Proposed Development would give rise to some localised significant effects on landscape character and visual amenity. The Proposed Development would result in direct and significant effects on the part of the landscape character type within which the Proposed Development is located, LCT 7 Craggy Upland, and these would extend to approximately 1 km.

4.2.5 No indirect significant effects were found within other LCTs when assessed against the current baseline, which includes the existing Beinn Ghlas turbines. However, when assessed against a theoretical zero baseline, in which the existing Beinn Ghlas turbines have been decommissioned, in Technical Appendix 5.8, significant effects would also extend to approximately 4 km within LCT 7a Craggy Upland with Settled Glens, up to 7.5 km within LCT 4 Mountain Glens, and up to 10 km within LCT 2 High Tops and LCT 20 Rocky Mosaic.

4.2.6 It has been assessed in Technical Appendix 5.5 that against the existing scenario which includes the operational Beinn Ghlas, there would be significant visual effects experienced at two of the 19 representative viewpoints. These are viewpoints 2 (Clach Bhadan – Figure 5.35) and 7 (Ardchattan Priory – Figure 5.40), located between 1.5 km and 8.3 km from the proposed turbines). When assessed against a baseline without the

existing Beinn Ghlas turbines in Technical Appendix 5.8, four additional significant effects are assessed for viewpoints 3 (Taynuilt Church – Figure 5.26), 4 (Creag Ghlasrach – Figure 5.37), 8 (B845) and 18 (Bonawe Jetty – Figure 5.51) located between 5 km and 10.2 km from the proposed turbines.

4.2.7 The Proposed Development would be visible from various nearby properties, settlements as well as the surrounding road network and footpath network.

4.2.8 Significant effects on residential properties were identified in Section 5.7 of this chapter when assessed against the existing baseline scenario from the cluster around Balindore (3.8 km north northeast of the nearest proposed turbine). When assessed against a theoretical zero baseline in Technical Appendix 5.8, properties with open views in the direction of Proposed Development in Taynuilt (4.8 km northeast), were also found to experience significant visual effects, but these would not be of such a scale as to become dominant or overbearing.

4.2.9 In relation to recreational routes, there were found to be significant visual effects from very limited parts of Core Path C171 – Kilmore – Loch Nant (from approx. 1.3 km south) when considered against the existing baseline in Section 5.7 of this chapter. When assessed against the theoretical zero baseline in Technical Appendix 5.8, significant effects were assessed for two other core paths (C158 – Achnlonan to Taynuilt Jetty (approx. 5.6 km away) and C517 - Inverawe to Glenkinglass, approx. 6.8 km away).

4.2.10 In the assessment of roads, in Section 5.7 of this chapter, significant effects were found to occur from a section of the minor road between the A828 and B845 near to Ardchattan Priory. When assessed against the theoretical zero baseline scenario in Technical Appendix 5.8, significant effects were also found to occur from a section of the B845 to the north of Loch Etive.

4.2.11 Technical Appendix 5.7, which assessed the effects on the special qualities of NSAs, identified no significant effects which would undermine the overall integrity of the SLQs of an NSA to such a degree as to undermine their overall integrity.

4.2.12 The assessment of Designated Landscapes identified no significant effects from the North Argyll LLA. However, in the zero baseline scenario, significant effects were found within approx. 10 km of the Proposed Development. It is not considered that the addition of the Proposed Development would result in a significant effect on special qualities of the LLA or on the integrity of the designation.

4.2.13 The assessment of Cumulative Effects found that if the other consented schemes, including Blarghour Wind Farm and Ladyfield Renewable Energy Park, were already built and in the landscape, either individually or in totality, the extent of significant cumulative effects would be no different to the solus effects of the Proposed Development on LCT 7a Craggy Upland with Settled Glens, LCT 4 Mountain Glens or LCT 20 Rocky Mosaic due to its location relative to the other schemes.

4.2.14 If the other in-planning schemes, including Cruach Clenamacrie, Corr Chnoc, An Carr Dubh and Eredine Wind Farms, were already built and in the landscape, the extent of significant effects brought about by the addition of the Proposed Development would be reduced such that there would be no significant effects to landscape character. Significant visual effects would be limited to close-distance views from the south, such as viewpoint 2 on core path C171, and from a short section of the B845 to the north where landform screens views of the other in-planning schemes.

4.2.15 In terms of the totality of cumulative effect on landscape character, considering the combined impact of all consented wind farms and those in planning, there would be a significant overall effect on the character of LCT 7, with the principal contributors being those currently in planning. The Proposed Development would not result in any additional significant effects. The character of LCT7, in which the presence of occasional wind farms was a recognised characteristic feature, would be reinforced. However, the spacing between wind farms would enable the continued appreciation and understanding of the existing character of the LCT.

4.2.16 It is considered that the addition of the Proposed Development combined with all consented wind farms and those in planning, would result in significant effects on views experienced at various points within the area, but these would be experienced regardless of the addition of the Proposed Development.

4.3 Ecology

4.3.1 This ecology chapter (**Chapter 6**) of the EIAR considers the likely effects of the Proposed Development on ecological receptors at the Site and surrounding Study Areas, during construction and operation. This assessment is based upon comprehensive baseline data, comprising specifically of targeted ecological field surveys of important and legally protected ecological receptors identified during desk study and consultation feedback. It draws upon pre-existing information, where appropriate, from other studies, survey data sources and NatureScot and the Chartered Institute for Ecology and Environmental Management (CIEEM) best practice guidance.

4.3.2 Targeted baseline ecology surveys, following best practice guidance, were undertaken within the Site and surrounding Study Areas between 2022 and 2025.

4.3.3 The Study Areas were generally characterised by wet heath and blanket bog in a variety of conditions. Other habitats present included dry dwarf shrub heath, marshy grassland, acid grassland, and flush.

4.3.4 There were occasional signs of badger, otter, red squirrel and pine marten recorded within the Study Areas. There were low numbers of bats recorded in the open habitat, including common pipistrelle, soprano pipistrelle with occasional records of brown long-eared bat and Daubenton's bat.

4.3.5 Potential direct and indirect impacts were assessed following best practice guidance and were considered both during construction and during operation. Impacts on potentially sensitive ecological receptors were avoided and minimised wherever possible in line with NPF4 and best practice guidance and were incorporated into the design process (embedded mitigation).

4.3.6 After embedded mitigation, this assessment does not predict any likely significant ecological residual effects associated with the construction and operation of the Proposed Development.

4.3.7 Opportunities for ecological restoration and enhancement are described in the **Outline Biodiversity Enhancement and Habitat Management Plan (OBE-HMP)** (**Volume 4, Technical Appendix 6.10**) in accordance with Policy 3 of NPF4.

4.4 Ornithology

4.4.1 The ornithology chapter (**Chapter 7**) presents the findings of the assessment of likely significant effects of the proposed Beinn Ghlas Wind Farm Repowering development (the 'Proposed Development') on ornithological features. It details the methods used to establish the bird populations within the Site and its surroundings, the results of the baseline surveys, and the process used to determine the sensitivity of the bird populations present. The ways in which birds might be affected (directly or indirectly) by the construction and operation of the Proposed Development are assessed, prior to and after the application of any required mitigation measures.

4.4.2 Baseline ornithological conditions to inform the design and assessment of the Proposed Development have been established through desk studies, ornithological field surveys and consultation with stakeholders and specialist recording groups.

4.4.3 Based on a combination of field surveys and a desk study, the only species of Nature Conservation Importance that required detailed consideration was golden eagle and white-tailed eagle. All other species recorded were scoped out of the assessment due to a lack of potential for significant effects. The identified impact pathways acting on golden eagle and white-tailed eagle were disturbance and habitat loss during construction (and decommissioning) and displacement and collision risk during operation.

4.4.4 When mitigation and best practice measures were considered (primarily ensuring no disturbance to breeding golden eagle and white-tailed eagle during construction via the Bird Protection Plan), no significant effects were identified. Mitigation and enhancement measures will be delivered through the implementation of a Biodiversity Enhancement and Habitat Management Plan (BEHMP). Additional enhancement measures were also committed to and will form part of the BEHMP.

4.4.5 These would be secured by way of appropriately worded planning condition.

4.4.6 No potential cumulative effects were identified.

4.4.7 In all cases no significant residual effects were predicted.

4.5 Hydrology, Geology and Hydrogeology

4.5.1 This Chapter (**Chapter 8**) considers the potential effects of the Proposed Development on geology, hydrology, hydrogeology and peat. It details the current environmental baseline in relation to this topic and identifies and assesses the potential significant effects on identified receptors. The assessment tables present the effects of each infrastructure section on the receptors identified. These effects are then grouped for the assessment section which discusses the overall effects. Where relevant, mitigation, management and monitoring measures are then discussed and the residual effects determined.

4.5.2 The Chapter presents associated links to other chapters or appendices such as **Chapter 6 and the OBE-HMP, Technical Appendix 6.10**.

4.5.3 A detailed programme of peat depth and peatland condition surveying has been completed and the results used to inform the Site design to avoid areas of deeper peat deposits. A Peat Landslide Hazard Risk Assessment and Outline Peat Management Plan

have been produced for the Proposed Development, which show that risks to peat slide have been avoided and all excavated peat can be appropriately used on site for peat restoration purposes.

4.5.4 The Proposed Development lies outwith any floodplain areas and, although a number of private water supplies are located nearby any effect on these water supplies can be suitably protected through the implementation of a drainage management plan, pollution prevention plan and water quality monitoring plan. No sites designated for reasons associated with geology or hydrology have the potential to be affected by the Proposed Development.

4.5.5 Sustainable Drainage Systems (SuDS) have been proposed to ensure that the rate of runoff from the Site post-development is no greater than that prior to development and would not therefore increase any downstream flood risk. The proposed SuDS allow the quality of water to be managed at source, prior to any discharge, thereby helping to prevent any reduction in water quality downstream.

4.5.6 Potentially groundwater-dependent terrestrial ecosystems have been identified within the Application Boundary and assessed on a case-by-case basis to determine their level of groundwater dependency and potential impacts from development. Location-specific mitigation measures are provided to manage potential impacts arising from construction activities where it has not been possible to avoid these areas.

4.5.7 Mitigation measures have been identified for all potential impacts, either through the design process or in accordance with good practice guidance. It has been shown, as a consequence of the Proposed Development design and embedded mitigation, that no significant impacts on geology, hydrogeology, hydrology and peat would arise as a result of the Proposed Development.

4.6 Cultural Heritage

4.6.1 The Archaeology and Cultural Heritage chapter (**Chapter 9**) of the EIAR considers the likely effects on cultural heritage interests arising from the Proposed Development. The assessment of effects upon cultural heritage has considered potential direct/indirect physical impacts related to construction of the Proposed Development on the fabric of heritage assets (including the decommissioning of the currently operational Wind Farm) and impacts on the setting of a heritage asset that could affect its cultural significance.

4.6.2 A desk-based baseline assessment including a ‘Stage 1’ Setting Assessment was undertaken to identify known heritage assets and the potential for currently unrecorded heritage assets to be present within the Application Boundary, as well as assets in the wider landscape which may be impacted by the Proposed Development through changes to their setting. A final list of assets was agreed with Historic Environment Scotland (HES) and taken forward for assessment as part of this EIA.

4.6.3 There are seven known heritage assets located within the Application Boundary as shown in **Volume 3a, Figure 9.1a and Figure 9.1b**.

4.6.4 Possible accidental direct physical impact upon HA01 Deirdre Shieling Memorial (a modern memorial and sculpture within the Site) will be mitigated by its fencing off for protection throughout construction. The monument’s location will also be included on construction plans and its presence highlighted in project inductions.

4.6.5 No direct or indirect physical impacts as a result of the Proposed Development are anticipated upon known heritage assets within the Application Boundary.

4.6.6 The Site is considered to hold negligible archaeological potential however without field evaluation this cannot be certain and impacts on hitherto unknown archaeological remains is therefore possible using a precautionary principle.

4.6.7 Impacts on unexpected archaeological remains elsewhere in the Site may occur during the construction phase. It is anticipated that preservation by record through archaeological monitoring (watching brief) is likely to be required over construction groundworks for the Proposed Development. The scope and nature of additional mitigation will be outlined in a Written Scheme of Investigation (WSI) and agreed with A&BC in advance of construction, and it is assumed this will be proportionate to the negligible archaeological potential of the Site.

4.6.8 Following implementation of the proposed programme of archaeological mitigation of construction phase impacts there would be **no residual physical effects** on cultural heritage.

4.6.9 A 'Stage 1' Setting Assessment (**Volume 4, Technical Appendix 9.1**) found the potential for effects through changes within their setting on the cultural significance of one Inventory Garden and Designed Landscape, one Category B Listed Building, and six Scheduled Monuments (**Volume 3a, Figure 9.2**). These eight heritage assets are assessed in detail in this chapter, supported with photomontage visualisations (**Volume 3a, Figures 9.3 – 9.9**).

4.6.10 Of these assets agreed for detailed assessment in this chapter, no impact has been identified upon:

- GDL00019 / SM13644 / LB4715 Ardchattan Priory / Ardchattan House Garden and Designed Landscape, Scheduled Monument, Category B Listed Building (**Volume 3a, CHVP01 Figure 9.3**)
- SM4120 Caisteal Suidhe Cheannaidh, dun 470m NW of Achnacraobh (**Volume 3a, CHVP05 Figure 9.7**)
- SM3891 'Clachadow, cairn 960m NW of' (**Volume 3a, CHVP06 Figure 9.8**)
- SM3888 Glenamachrie, cairns 65m & 300m WNW of (**Volume 3a, CHVP07 Figure 9.9**)

4.6.11 Residual adverse operational effects which are **minor** and **not significant** are predicted upon two Scheduled Monuments:

- SM3910 'An Dun, dun 500m ESE of Glenamadrie' (**Volume 3a, CHVP02 Figure 10.4 & CHVP03 Figure 9.5**)
- SM3930 'Barguillean Farm, dun 250m SSW of' (**Volume 3a, CHVP04 Figure 9.6**)

4.6.12 In respect of the setting of heritage assets, no additional mitigation beyond that embedded in the design is proposed.

4.6.13 **No cumulative effects** have been identified.

4.6.14 **No significant residual effects** upon cultural heritage have been identified through EIA as presented in this chapter.

4.7 Traffic and Transport

4.7.1 The Traffic and Transport chapter assesses the potential effects of the Proposed Development on the road network (in transport terms) and its users. The assessment detailed within **Chapter 10** of the EIAR includes worst-case assumptions made for the purpose of forming a robust assessment of the Proposed Development within the parameters identified elsewhere within the EIAR.

4.7.2 The Study Area for construction vehicles is focused on the immediate roads surrounding and leading to the Proposed Development, as it is expected that traffic flows outside of this area would be dissipated on the wider road network without any significant effect. This chapter therefore only considers the likely increases in traffic along these routes associated with the Proposed Development.

4.7.3 A desk-based review of the impacts arising from the construction of the Proposed Development was undertaken, including the following:

- collection and analysis of available road traffic accident data over the Study Area;
- using a preliminary construction programme, quantifying construction phase trips based on the quantity of material required for the Proposed Development (including generation as a result of potential forestry removal, commercial or otherwise) and the duration of each specific construction phase activity;
- determination of a traffic baseline, taking account of measured existing traffic flow and other developments that have been identified for inclusion within the cumulative assessment; and
- quantification of the relative increases in traffic resulting from the construction phase of the Proposed Development.

4.7.4 In summary, traffic levels are within the IEMA thresholds of a 30 % increase to HGV and total traffic volumes (Rule 1) across the Study Area, except from Glen Lonan Road where HGV and total traffic volumes during the peak month of construction exceed Rule 1.

4.7.5 An assessment of the cumulative effect of all relevant developments, including local wind farms (either in planning system or under construction) which may utilise the same access routes as the Proposed Development, has also been undertaken.

4.7.6 Given the temporary nature of the construction programmes and with the implementation of mitigation measures through a Construction Traffic Management Plan (CTMP) and Abnormal Load Traffic Management Plan (ATMP), all traffic and transport effects (including cumulative) can be effectively managed and are assessed as negligible. No significant residual effects would remain after mitigation measures have been implemented.

4.8 Noise

4.8.1 The noise and vibration chapter (**Chapter 7**) summarises the assessment of the potential noise and vibration effects of the Proposed Development on the residents of nearby dwellings.

4.8.2 Noise will be emitted by equipment and vehicles used during construction of the Proposed Development and by the turbines during operation. The level of noise emitted by the sources and the distance from those sources to the receiver locations are the main factors determining levels of noise at receptor locations.

4.8.3 Construction noise has been assessed by a desk-based study of a potential construction programme (including the decommissioning of the existing wind turbines) and by assuming the Proposed Development is constructed using standard and common methods. Noise levels have been calculated for receiver locations closest to the areas of work and compared with guideline and baseline values. Construction noise, by its very nature, tends to be temporary and highly variable and therefore much less likely to cause adverse effects. Factors including in particular the restrictions of hours of working have been taken into consideration. It is concluded that noise generated through construction activities would have a minor impact, provided that some activities are further restricted during weekend periods.

4.8.4 Operational turbines emit noise from the rotating blades as they pass through the air. This noise can sometimes be described as having a regular 'swish'. The amount of noise emitted tends to vary depending on the wind speed. When there is little wind, the turbine rotors will turn slowly and produce lower noise levels than during high winds when the turbine reaches its maximum output and maximum rotational speed. Background noise levels at nearby properties will also change with wind speed, increasing in level as wind speeds rise due to wind in trees and around buildings, etc.

4.8.5 Noise levels from operation of the turbines have been predicted for those locations around the site most likely to be affected by noise. Noise limits have been derived following the simplified assessment method stipulated in national planning guidance given the relatively large separation distance of approximately 1.9 km or more between the turbines and the nearest Noise-Sensitive Receptors (NSRs). Wind developments within 5 km have been considered in the cumulative assessment: the Cruach Clenmacrie and Corr Chnoc Wind Farms. Other, more distant wind farms were not considered as they do not make an acoustically relevant contribution to cumulative noise levels. Predicted operational noise levels have been compared to the limit values to demonstrate that turbines of the type and size which would be installed can operate within the limits so derived. It is concluded therefore that operational noise levels from the Proposed Development will be within levels recommended in national guidance for wind energy schemes.

4.9 Socio-economics, Land Use, Recreation and Tourism

4.9.1 An assessment of the potential socio-economic effects of the Proposed Development and the likely significance of these on tourism, recreation, land use economic output, employment generation and other indirect effects was undertaken and is presented in Chapter 12.

4.9.2 The socio-economic structure of Oban North and Lorn (the Local Area) and Argyll and Bute, and future demographic pressures, highlight the need for the creation of job opportunities, to retain and attract the working age population in the area.

4.9.3 No significant socio-economics effects are expected to occur in EIA terms in the presence of the Beinn Ghlas Wind Farm Repowering (the Proposed Development). However, socio-economics effects are considered to comply with the advice in NPF4 Policy 11(c) regarding the maximisation of net economic impact in support of wider statutory outcomes including rural repopulation, health and wellbeing, equality and climate action.

4.9.4 The assessment of whether the Proposed Development will maximise these benefits is based on the commitments and actions that the Applicant has taken on supply chain development, skills development, the empowerment of communities and balancing the development with environmental protection and enhancement. This considered both what the Applicant has direct control over, and how it can enable others to have a positive impact across these areas.

4.9.5 The Applicant is committed to engaging with local suppliers to maximise local benefits from the wind farm by supporting the local community and working with local contractors whenever the project requirements and conditions allow. A supplier registration page is included on the project website (https://www.beinnghlasrepowering.co.uk/suppliers-registration/) to communicate opportunities across all phases of the Proposed Development. In addition, the Applicant will organise a contractors open day / 'Meet the Buyer' event to ensure maximum engagement with contractors. This will ensure high local supply chain content and provide opportunities for local employment which are routed in the needs and context of the Argyll and Bute economy.

4.9.6 The Applicant has developed an Outline Circular Decommissioning Strategy (Nadara and Reblade, 2025) to identify circular opportunities for the decommissioning of the existing wind farm and has committed to supporting the protection of the local environment by minimising waste, reducing carbon emissions and promoting sustainable material use, and creation of circular jobs, skills and educational opportunities. The Applicant has proactively engaged with local schools to support skills development in the local onshore wind sector, including delivering a STEM workshop at Taynuilt Primary School in partnership with 3DW. An invitation has been extended to Oban High School to provide a similar workshop. These initiatives will provide opportunities for skills development and support the continuation of innovative processes to maximise onshore wind benefits.

4.9.7 The Proposed Development is also expected to provide an annual contribution of approximately £168,000 per annum in community benefits[3] which could support up to two jobs each year. The Applicant is actively engaging with the communities surrounding their onshore wind farms organising events such as annual forums to give them an opportunity to provide feedback and also keep them informed of the development and associated benefits.

4.9.8 The approach outlined above will maximise the net socio-economic benefits to both Scotland and Argyll and Bute.

[3] Based on 7 turbines with capacity of approximately 4.8 MW. The value of the community benefit fund will depend on the installed capacity.

4.9.9 The assessment of the economic impacts of the Proposed Development estimated that the expenditure associated with development and construction activity could generate:

- £3.0 million Gross Value Added (GVA) and support 34 job years[4] in Argyll and Bute; and
- £8.7 million GVA and 103 job years across Scotland.

4.9.10 The expenditure required for the operations and maintenance of the Proposed Development could generate each year:

- £0.3 million GVA and support three jobs in Argyll and Bute; and
- £1.1 million GVA and nine jobs across Scotland.

4.9.11 During its operations, the Proposed Development is expected to generate approximately £408,900 in non-domestic rates yearly5. These payments will contribute to the funding of local public services and the investment priorities of local communities.

4.9.12 This economic activity, and the commitments outlined above, will contribute to the human, economic, social and natural capital of Argyll and Bute. This will increase the resilience of these communities and support their long-term economic development.

4.9.13 The assessment of the Proposed Development has found that the approach taken is:

- **place-based** and rooted in the context of Argyll and Bute;
- **innovative** in its approach to maximising benefits;
- **collaborative** with other developers, communities or public bodies;
- **transparent**, including a commitment to impact evaluation;
- **flexible** enough to meet the evolving needs of the community; and
- **deliverable** and an environment will be created to allow communities to deliver those benefits which are enabled by the wind farm.

4.9.14 The assessment has also considered any impacts on the local tourism economy, in particular tourism assets within 15 km of the Proposed Development. It found that the Proposed Development is not expected to affect local accommodation providers, recreational activities, and tourism attractions, which is in line with the literature which finds no relationship between wind farm developments and tourism.

4.9.15 The Applicant has proposed a wide range of initiatives in pursuit of the policy intention of NPF4 Policy 11(c) to "maximise net economic impact". These are consistent with the Scottish Renewables guidance (Scottish Renewables, 2025), covering the four themes of maximising the supply chain, skills and workforce, community empowerment, and natural environment benefits. The comprehensive package of measures is expected to deliver substantial economic and community benefits, in line with the intention of NPF4 Policy 11(c).

[4] A job year is one year of work for one person.

[5] Non-Domestic Rates or Business rates are a property-based tax. Rates are charged on all business properties. The proceeds of the Non-Domestic Rate are paid into a national pool administered by the Scottish Government for redistribution to local authorities in Scotland.

4.10 Other Considerations

The Other Issues Chapter (**Chapter 13**) considers the potential effects of the Proposed Development on the following topics:

- aviation;
- telecommunications;
- shadow flicker;
- forestry; and
- carbon balance.

Aviation

4.10.1 The objective is for the Proposed Development to have no significant residual impacts on aviation infrastructure. This is addressed through consultation with all relevant stakeholders within the consenting process. The task of the Applicant is to independently assess the potential effects and, where significant effects may occur, to enter a dialogue with the affected stakeholders prior to submission as far as is possible. Whilst the aim of this pre-submission dialogue is to elicit the approval of all stakeholders, typically solutions are identified but do not reach full maturity at this stage in terms of the assessment by the stakeholders and the contracting of mitigation where required. The stakeholders consider dialogue a higher priority and more meaningful once design iterations are completed and a live application exists.

4.10.1 An initial scoping assessment identified those stakeholders potentially affected by the Proposed Development. The assessment process involves considering all military and civil aerodromes in the wider area out to approximately 60 km; all radar installations out to the limit of their range; all navigational aids; air-ground-air communications stations and low flying activities. A key sensitivity is the visibility of the Proposed Development to those radars potentially affected. Because of this, studies have been conducted prior to submission to assess the visibility of the Proposed Development to all relevant radars in the area.

4.10.2 There are no significant aviation impacts during construction or decommissioning., The primary consideration in terms of effects and mitigation, arises from the operational phase of the development. Scoping responses have identified no aviation issues. This is in line with the findings from the initial scoping assessment and is reported in the EIA Report.

4.10.3 No mitigation is required throughout the operational phase of the Proposed Development.

Telecommunications

4.10.4 Radio waves and microwaves are used in a variety of communications. Structures such as wind turbines have potential to interfere with their reception. As part of the EIA process, consultation was undertaken with bodies that are responsible for managing and maintaining telecommunications networks and buried infrastructure.

4.10.5 Telecommunications link infrastructure was identified through consultation with the relevant telecommunications stakeholders. The search radius was, therefore, informed

by the safeguarding criteria applied by each stakeholder. Only telecommunication links that crossed the Site were considered.

4.10.6 In conclusion, based on the assessment of the identified infrastructure and consultation with link operators, the Proposed Development would have no significant effects on telecommunications links.

Shadow Flicker

4.10.7 Rotating wind turbine blades can cause brightness levels to vary periodically at locations where they obstruct the sun's rays. This intermittent shadow, particularly when the sun is low, is defined by the term 'shadow flicker'. The effects of shadow flicker can cause annoyance to local residences when shadows are cast over windows for a significant period of time throughout the year. However, there is only an issue under specific circumstances whereby a significant effect is produced for extended periods of time.

4.10.8 No wind turbines are located within the Zone of Potential Shadow Flicker (ZPSF) (as per Scottish Government guidance). The ZPSF defines the area within which Shadow Flicker effects can occur. It is common to use 10x the wind turbines rotor diameter as the maximum limit of the ZPSF from the turbine location, and 130º either side of north (as per Department of Environment and Climate Change studies[6]).

There are no properties within the ZPSF (approximately 1.3 km from any turbines location) and therefore, an assessment of Shadow Flicker effects has been scoped out from further assessment.

Forestry

4.10.9 Commercial forestry is not a receptor in EIA terms therefore the potential impacts on the forestry resource is not considered in terms of significance. The residual effects instead relate to the changes to the forestry resource within the study area and compliance with the Control of Woodland (CWR Policy), for the consideration of relevant consultees.

4.10.10 Given the minor amount of permanent felling predicted, there would be a negligible impact on the long term age structure and species composition of the forestry on the Fearnoch Forest plantation.

4.10.11 There would be a minor amount of permanent felling on the Barguillean Estate plantations; however, the biodiversity enhancement and compensatory planting measures would result in a beneficial change to the species composition and age structure of the forestry within Barguillean Estate. This would be a net increase in the forestry onsite so would be a beneficial impact.

4.10.12 Overall, it is considered that the Proposed Development would comply with the CWR Policy.

Carbon Balance

4.10.13 A carbon balance assessment has been undertaken regarding the Proposed Development and is detailed in **Technical Appendix 13.4**. This assessment uses the Scottish Government's Carbon Calculator for wind farms on peat to assess the benefit of displacing electricity from fossil fuels with renewable generated electricity, compared to the emissions of carbon required for the construction and operation of the Proposed

[6] Department of Energy and Climate Change (2011), Update of UK Shadow Flicker Evidence Base.

Development over its approximately 35-year lifetime, including losses of stored carbon from disturbed peatland and reduction of carbon fixing vegetation cover. The Carbon Calculator provides an estimate of the carbon payback time for the Proposed Development.

4.10.14 The results of the Carbon Calculator show that the Proposed Development is estimated to produce annual carbon savings of around 32,000 tonnes of CO_2e per year through the displacement of grid electricity, based on the current average grid mix.

4.10.15 The assessment of the Proposed Development estimates losses of around 64,000 tonnes of CO_2e, nearly all of which come from the lifecycle emissions of the turbines. Ecological site-based losses account for just over 10,000 tCO2e while restoration of areas of degraded bog are estimated to produce gains over the lifetime of the Proposed Development through blocking of drains and re-wetting of peat; these gains are estimated at nearly 16,000 tonnes of CO2e, which is greater than the ecological site-based losses.

4.10.16 The estimated payback time of the Proposed Development, using the Scottish Government Carbon Calculator, is 1.5 years, with a minimum/maximum range of 0.8[7] to 2.3 years. There are no current guidelines about what payback time constitutes a significant impact, but 1.5 years is only 4 % of the anticipated lifespan of the Proposed Development. The carbon intensity of the electricity produced by the Proposed Development is estimated at 0.019 $kgCO_2e/kWh$. This is well below the outcome indicator for maintaining the electricity grid carbon intensity below 0.05 $kgCO_2e/kWh$ required by the Scottish Government in the Climate Change Plan update and therefore the Proposed Development is evaluated to have an overall beneficial effect on the carbon balance.

[7] The reason that this negative result occurs is that the Carbon Calculator recognises that the infrastructure is planned on areas of shallow peat and therefore excavating the peat (estimated at approximately 31,500 m3) produces fewer GHG emissions than leaving it in situ (as indicated by the negative emissions). This is because peat bogs release both methane and carbon dioxide, as well as sequestering carbon, while excavated peat is assumed to decompose to just carbon dioxide. Since methane is a much more potent GHG, the emissions of a shallow peat deposit in situ are estimated to be higher.

5 NEXT STEPS

5.1.1 This EIA Report will be publicised in accordance with Part 5 of the EIA Regulations.

5.1.2 A notice will be published as follows:

- on the project website: https://www.beinnghlasrepowering.co.uk/;
- in the Edinburgh Gazette; and
- in the Oban Times and Argyllshire Advertiser.

5.1.3 A hard copy of the EIA Report can be viewed at the following locations during its opening hours:

Oban Customer Service Point	**Taynuilt Post Office**
Municipal Building	Main Street
Albany Street	Taynuilt
Oban	PA35 1JE
PA34 4AW	

5.1.4 A copy of the EIA Report volumes will be made available for download from the project website at: https://www.beinnghlasrepowering.co.uk/ and Argyll & Bute Council's planning portal.

5.1.5 Paper copies of the NTS are available free of charge from:

RSK Environment Limited

65 Sussex Street

Glasgow

G41 1DX

Email: rbeck@rsk.co.uk

5.1.6 Paper copies of the EIA Report may be purchased by arrangement from the above address for £1,200 per copy, or £15 per disk/USB memory stick copy. The price of the paper copy reflects the cost of producing all of the Landscape and Visual photographs at the recommended size. As such, a disk/USB memory stick version is recommended.

6 FIGURES

Figure 1: Site Location

Figure 2: Proposed Site Layout

Figure 3: Proposed Site Layout (zoomed in)