Vattenfall

Edinbane Repower and Extension Wind Farm

Scoping Report

WSP Environment & Infrastructure Solutions UK Limited – November 2022

Report for

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1	Draft for comment	28/10/22
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Contents

1. Introduction

1.1 Overview

1.1.1 Edinbane Wind Farm on the Isle of Skye was consented in 2007 by the Highland Council (HC) and became operational in 2010 (application reference 02/00089/FULSL). It has an export Capacity of 41.4 Megawatts (MWs) and comprises of 18 Enercon E70 – 2.3MW Wind Turbine Generators (WTGs) with a maximum turbine tip height 100m and hub height 64m.

1.1.2 Vattenfall (hereafter referred to as the "Applicant") is proposing to repower and extend the operational Edinbane wind farm. The Applicant wishes to repower the existing wind farm, replacing older first-generation wind turbines with larger more powerful models.

1.1.3 The proposed Development Site is located approximately 2 kilometres (km) to the south of Edinbane and approximately 11km west of Portree. The majority of the Development Site comprises moorland, next to commercial forestry and is centred at National Grid Reference (NGR) E135000, N847000. **Figure 1.1** in Appendix A shows a site location map in the wider landscape; and **Figure 1.2** in Appendix A shows the Development Site boundary and indicative proposed turbine locations along with the existing turbines for reference.

1.1.4 The applicant is proposing to submit a planning application under Section 36 of the Electricity Act 1989, as amended, seeking consent to construct and operate the 'Proposed Development', currently anticipated to comprise up to 19 wind turbines with a maximum tip height of up to 200metres (m) and combined generating capacity of up to 90 Megawatts (MW). Other associated infrastructure will include access tracks, crane hard standings, battery storage area, an electricity substation, at least one permanent anemometer mast and a temporary construction compound. An initial site layout has been developed to inform the preliminary environmental assessments and identify the scope of work required for the subsequent Environmental Impact Assessment (EIA).

1.1.5 The development falls under Schedule 2 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the "EIA Regulations") as a generating station (Schedule 2(1)). A Schedule 2 development constitutes EIA development if the development is likely to have significant effects on the environment by virtue of factors such as its nature, size or location, as set out in Schedule 3 of the EIA Regulations.

1.1.6 In recognition of the scale and nature of the Proposed Development, the Applicant will undertake an EIA to assess potentially significant environmental effects. Under Section 36 of the Electricity Act 1989, as amended, the Proposed Development would require authorisation from the Scottish Ministers as it would be a power generating station in excess of 50 MW.

1.2 Purpose of this Report

1.2.1 This report sets out the proposed scope of the EIA, which is submitted to the Scottish Ministers as a formal request for a Scoping Opinion[1].

1.2.2 The purpose of this Scoping Report is therefore to:

[1] A scoping opinion is defined under the EIA Regulations as "an opinion adopted by the Scottish Ministers as to the scope and level of detail of information to be provided in the EIA Report".

- Define the Proposed Development being considered (**Chapter 2**);
- Describe the consenting and EIA requirements in relation to the Proposed Development (**Chapter 3** and **Chapter 4**);
- Describe the relevant renewable energy policy context (**Chapter 5**); and
- Outline the aspects of the Proposed Development that could potentially result in significant environmental effects (**Chapter 3**) and, where potentially significant effects may result, the methodologies that will be used to assess potential impacts (**Chapter 6 – 14**).

1.3 The Applicant

1.3.1 Vattenfall is a leading European energy company with approximately 20,000 employees, owned by the Swedish state. For more than 100 years Vattenfall has powered industries, supplied energy to people's homes and modernised the way its customers live through innovation and cooperation.

1.3.2 Vattenfall aims to make fossil-free living possible within a generation and is leading the transition to a more sustainable energy system through growth in renewables and climate-smart energy solutions for our customers. Vattenfall has over 50 wind farms, onshore and offshore, across five countries and pioneered co-locating wind with solar energy generation and battery storage. They have been in the UK since 2008, investing over £3.5 billion in enough wind to power nearly a million British homes. Vattenfall owns the largest onshore wind farm in England and Wales, Pen y Cymoedd, and in Scotland operates wind farms on the Isle of Skye and in Aberdeenshire. Vattenfall are committed to promoting a wellbeing economy by ensuring they achieve long term investment in the local communities where they operate. They focus on the environmental and social aspects of their developments and work together with local and national stakeholders to achieve shared goals.

1.4 The Agent

1.4.1 WSP is an international business that includes one of the UK's largest multidisciplinary environmental and engineering consultancies. WSP Environment & Infrastructure Solutions UK Limited ("WSP EIS") has been commissioned to prepare this Scoping Report. WSP EIS (previously Wood, Amec Foster Wheeler, Amec and Entec UK prior to acquisitions) operates from 12 office locations throughout the UK. With skills ranging from development planning and design through an array of environmental and engineering disciplines, WSP EIS has a comprehensive service portfolio and applied experience in a wide range of markets.

1.4.2 The EIA will be carried out by WSP EIS to standards that comply with quality standards identified by the Institute of Environmental Management and Assessment (IEMA). The EIA Quality Mark scheme was introduced in 2011 and WSP EIS (through its previous entities Wood, Amec Foster Wheeler, Amec and Entec UK) was a founder member, holding continuous membership since then. Each year, EIA Quality Mark recipients are required to demonstrate seven commitments relating to EIA management, team capabilities, regulatory compliance, EIA context and influence, EIA content, and improving EIA practice. WSP EIS's approach to these matters is examined by IEMA through several methods, including review of a sample of our Environmental Statements/EIA Reports Wood, interviewing staff, publishing case studies and presentations made at conferences.

2. Project Description

2.1 The Development Site

2.1.1 The proposed Development Site lies 2.4 km to the south of the village of Edinbane on the Isle of Skye, and some 8km to the east of Dunvegan. The Development Site, which lies within the authority of the Highland Council (HC), is shown on **Figure 1.1** in **Appendix A** alongside the operational Edinbane Wind Farm layout.

2.1.2 The proposed Development Site is characterised as Upland Sloping Moorland at moderate elevation on Skye, closely associated with and often transitioning into Stepped Moorland. The Development Site sits within gently sloping and undulating upland moorland, partly contained by the higher ground of Ben Sca and Ben Aketil to the west, Ben Scudaig and Braon a' Mheallain to the south and Beinn a' Ghlinne Bhig and Ben Uigshader to the east.

2.1.3 From an initial consideration of potential constraints to the Proposed Development, there are no statutory designations on the Development Site.

2.1.4 The following internationally designated sites (Special Protection Areas (SPAs), Ramsar sites and Special Areas of Conservation (SACs)) are within 20 km of the Proposed Development:

- Cuillin SPA, situated approximately 13 km to the south, is designated for its golden eagle population; and
- Inner Hebrides and the Minches SAC, situated approximately 5 km to the west and designated for harbour porpoise.

2.1.5 Five hundred metres to the south-west of the Development Site, at An Cleireach, there lies an area of Geological Conservation Review which is additionally designated as a SSSI. There are no further SSSI's interests within 10 km. There are two Special Landscape Areas (SLA) within 10km of the Development Site; North West Skye and Greshornish.

2.1.6 The 18 turbines of the existing wind farm are arranged in a single array, as shown on **Figure 1.2**. Initial feasibility work has resulted in an indicative layout of up to 19 turbines. The turbines would have a tip height of up to 200m (existing turbines being a maximum tip height of 100m to tip), a rotor diameter of up to 170m and a capacity of up to 7.4MW. The total generating capacity is likely to be up to 90MW . The Applicant is considering the inclusion of Battery Storage and potentially a site assembly area for joint blade variants (should split blade technology be an option).

2.1.7 It is expected that the indicative layout will evolve in response to findings of initial assessment and consultation for example and it should be noted therefore that the indicative turbine coordinates and the final dimensions of each turbine will be determined as the design progresses.

2.1.8 The Applicant is seeking to have the Proposed Development consented, and capable of being built so that the wind turbines as part of the extended element of the Proposed Development can be constructed and operating whilst the existing wind farm turbines remain and on completion of these works the applicant will move to decommission the existing Edinbane wind turbines and replace these with the repowered turbines. This would maintain renewable energy generation of the existing wind farm whilst the repowered and extended wind farm is built and commissioned.

2.2 Development Description

2.2.1 The Proposed Development would comprise the following main elements:

- Up to 19 wind turbines with tip heights up to 200m;
- Access tracks connecting infrastructure elements. The existing internal tracks will be altered based on the location of the proposed wind turbines and other related infrastructures. The existing site access and track from the A863 (near Balmeanach), or the Ben Aketil Forest Trail from the A850 may be utilised, with upgrades implemented as required;
- Hard standing areas e.g. crane pads;
- Potential borrow pit(s);
- At least one anemometer mast;
- A battery storage area;
- Temporary working areas e.g. construction compound;
- Potential site assembly area; and
- Control building and substation (and electrical cabling between this and the turbines).

2.2.2 The indicative turbine locations are provided in **Table 2.1** and shown on **Figure 1.2** in **Appendix A.**

Table 2.1 Indicative Turbine Locations

Component	Maximum Height (m)	Location (NGR)
Turbine 1	200	E 135775, N 846100
Turbine 2	200	E 135794, N 847466
Turbine 3	200	E 135174, N 848582
Turbine 4	200	E 135536, N 846655
Turbine 5	200	E 135520, N 845076
Turbine 6	200	E 135581, N 847850
Turbine 7	200	E 135329, N 847046
Turbine 8	200	E 135932, N 845644
Turbine 9	200	E 135156, N 845270
Turbine 10	200	E 136457, N 848894
Turbine 11	200	E 136057, N 845158
Turbine 12	200	E 136013, N 848874
Turbine 13	200	E135320, N 846045
Turbine 14	200	E 135151, N 844413

Component	Maximum Height (m)	Location (NGR)
Turbine 15	200	E 135187, N 848017
Turbine 16	200	E 134962, N 846316
Turbine 17	200	E 134768, N 845398
Turbine 18	200	E 134936, N 847370
Turbine 19	200	E 136184, N 848122

3. EIA Process and Consultation

3.1 EIA Overview

3.1.1 EIA is a systematic process that must be followed for certain categories of project before they can receive development consent. It aims to identify a project's likely significant effects through the scoping process, and then assess those effects in an EIA Report. This helps to ensure that the importance of the predicted effects, and the scope for mitigation measures to reduce them, are properly understood by the public and, in this instance, the Scottish Ministers before they make their decision.

3.1.2 The EIA process should be systematic, analytical, impartial, consultative and iterative, allowing opportunities for environmental concerns to be addressed in the design of a project. Typically, a number of design iterations take place in response to environmental constraints identified during the EIA process prior to the final design being reached.

3.1.3 The EIA should be based upon recognised good practice and guidelines specific to each technical area and identify the likely significant environmental effects arising from a proposed development. Consultees are also encouraged to provide confirmation of agreement to the proposed scope in terms of what is included and excluded, the methodology, and the receptors identified.

3.2 EIA Terminology

Impacts and Effects

3.2.1 EIA is concerned with the identification of likely significant effects on the environment. However, the terms impact and effect are often used synonymously and this can lead to confusion. For clarity, the convention used in this report is to use 'impacts' within the context of the term EIA, which describes the process from scoping through EIA Report preparation to subsequent monitoring and other work. Otherwise, this document uses the word 'effects' when describing the environmental consequences of the Proposed Development. For example, such effects may come about as a result of the following:

- Physical activities that would take place if the development were to proceed (e.g. vehicle movements during construction operations); and
- Environmental changes that are predicted to occur as a result of these activities (e.g. loss of vegetation prior to the start of construction work or an increase in noise levels). In some cases one change causes another change, which in turn results in an environmental effect.

3.2.2 The predicted environmental effects are the consequences of the environmental changes for specific environmental receptors. For example, with respect to bats, the loss of roosting sites or foraging areas could affect the bats' population size; with regard to people, an increase in noise levels could affect amenity.

3.2.3 This report is concerned with assessing the significance of the environmental effects of the Proposed Development, rather than the activities or changes that cause them. However, this requires these activities to be understood and the resultant changes identified; often based on predictive assessment work.

Types of Effect

3.2.4 The 2017 EIA Regulations (Schedule 4, Part 5) require consideration of a variety of types of effect, namely direct and indirect, secondary, cumulative, positive and negative, short, medium and long-term, and permanent and temporary. In the EIA Report that will follow this Scoping Report, effects are considered in terms of how they arise, their nature (i.e. whether they are positive or negative) and duration. Each will have a source originating from the development, a pathway and a receptor and may fall into one of several categories:

- Direct effects are readily identified because of the physical connection between some element of the development and an affected receptor;
- Indirect effects require some additional pathway for the effect to arise. For example, a listed building may not be directly affected by any elements of a development, but its setting may be if the development is visible in views from it or when looking towards it; in which case there would be an indirect effect;
- Secondary effects would typically require further pathway connections, for example, an effect on a receptor population (A) could have a secondary effect on receptor population B, if B was itself dependent on A in some way, as, for example, a food source; and
- Cumulative effects arise when the receptors affected by one development are also affected by other developments resulting in the aggregation of environmental effects or the interaction of impacts.

3.2.5 Most predicted effects will be obviously positive or negative and will be described as such. However, in some cases it is appropriate to identify that the interpretation of a change is a matter of personal opinion, and such effects will be described as 'subjective'.

Temporal and Spatial Scope

3.2.6 In its broadest sense, the spatial scope is the area over which changes to the environment would occur as a consequence of the development. In practice, an EIA should focus on those areas where these effects are likely to be significant.

3.2.7 The spatial scope varies between environmental topic areas. For example, the effect of a proposed development on the landscape resource and visual amenity is generally assessed within a zone of up to 45km from the wind turbines (and potentially up to 60km for cumulative effects), whilst noise effects are assessed within a much smaller area encompassing those representative properties close to a development site.

3.2.8 The temporal scope is stated where known; and effects are typically described as:

- Temporary – likely to be related to a particular activity and will cease when the activity finishes. The terms 'short-term' and 'long-term' may also be used to provide a further indication of how long the effect will be experienced; and
- Permanent – this typically means an unrecoverable change.

3.2.9 Effects are generally considered in relation to the following key stages of a proposed development:

- Construction – the effects may arise from the construction activities themselves, or from the temporary occupation of land. Effects are often of limited duration although there is potential for permanent effects. Where construction activities create permanent change, the effects will continue into the operational period;

- Operation – effects may be permanent, or they may be temporary, intermittent, or limited to the life of a proposed development until decommissioning (as in the case of wind power developments which gain planning permission for a defined and finite number of years); and
- Decommissioning – effects may arise from the decommissioning activities themselves, or from the temporary occupation of land. The effects would generally be temporary and of limited duration. Additional permanent change would normally be unlikely unless associated with restoration.

3.3 EIA Scoping

3.3.1 The results of the EIA process are reported in an EIA Report and Schedule 4(4) of the EIA Regulations specifies that it should describe:

"… the factors… likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape."

3.3.2 Regulation 4(2) of the EIA Regulations requires the interaction between these factors to be considered. In addition, Regulation 4(4) requires EIA Reports to consider:

"… the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters."

3.3.3 Establishing which aspects of the environment are likely to be significantly affected by a particular project is captured in the EIA scoping process, which aims to identify those aspects of the environment and associated issues that need to be considered when assessing the potential effects resulting from a proposed development. This recognises that there may be some environmental elements for which the project is unlikely to have a significant effect and hence where there is no need for further investigation to be undertaken as part of the EIA.

3.3.4 The proposed scope of the EIA for the Proposed Development with respect to the following environmental topics is set out in **Chapters 6** to **15** of this report and comprises:

- Landscape and Visual (**Chapter 6**);
- Historic Environment (**Chapter 7**);
- Ornithology (**Chapter 8**);
- Ecology (**Chapter 9**);
- Noise (**Chapter 10**);
- Geology, Hydrology and Hydrogeology (**Chapter 11**);
- Traffic and Transport (**Chapter 12**);
- Socio-economics (**Chapter 13**); and
- Infrastructure and Other Issues (**Chapter 14**).

3.3.5 The scope and assessment methodologies proposed in this Scoping Report are based on recognised good practice and guidelines specific to each topic area. Baseline conditions have been determined through desk-based studies and survey work undertaken to date. The environmental topic chapters identify where significant effects are anticipated as a result of the Proposed Development and take into account:

- The description of the Proposed Development;
- Baseline data gathered to date;
- Relevant guidance on assessment methodologies; and
- Any cumulative effects, which may arise.

3.4 Cumulative Effects

3.4.1 Cumulative effects can arise from the interaction between a proposed development and other developments already built or proposed. In line with standard practice, for the purpose of the EIA, other wind farm developments which are operational, subject to planning approval or subject to a full and validated planning application will be considered in the assessment of potential cumulative effects[2]. It should be noted that some of the other developments identified may not have a cumulative effect in respect of any particular environmental topic considered in the EIA.

3.5 Mitigation

3.5.1 Some mitigation measures to avoid, reduce or offset the consequences of the Proposed Development would be embedded within its design whilst others may require adherence to particular constraints on construction methodology or mode of operation. The final assessment of significance will take into account the mitigation measures and constraints that have been incorporated into the Proposed Development; i.e. it will be the assessment of residual effects.

3.5.2 It is likely that the following management plans will be required prior to the construction of the Proposed Development should it be consented. It is likely that these will be submitted to discharge post-consent conditions:

- Construction Environmental Management Plan (CEMP);
- Habitat Management Plan (HMP) and Species Protection Plan;
- Peat Management Plan (PMP); and
- Traffic Management Plan (TMP).

3.5.3 Where specific measures to avoid, reduce or offset the consequences of the Proposed Development that are not embedded into the scheme design are taken into account, and which will require incorporation into one or more of these plans, these will be reported in the EIA.

3.6 EIA Methodology

3.6.1 The EIA Report will identify the assessment methodologies, based on recognised good practice and guidelines specific to each of the relevant environmental topic areas where the Proposed Development could result in significant effects. In general terms, the technical studies undertaken for each topic area and chapter included in the EIA Report to accompany the planning application would include:

[2] Cumulative impact assessment will consider other developments that are identified prior to an as yet undefined cut-off date which is required to allow assessments to be completed and reported in the EIA Report ahead of application submission.

- Collection and collation of existing baseline information about the receiving environment and surveys to fill any gaps in knowledge or to update any historic information, together with identification or any relevant trends in, or evolution of, the baseline;
- Consultation with experts and relevant consultees as necessary;
- Consideration of the potential effects of the Proposed Development on the baseline, followed by identification of any additional mitigation measures to seek to avoid or reduce any predicted adverse effects;
- Assessment and evaluation of any residual significant effects after mitigation measures have been implemented; and
- Compilation of the EIA Report chapter.

3.7 Consultation

3.7.1 Consultation is an essential element of the EIA process and will be reported within the EIA Report and supporting documentation as necessary.

3.7.2 The Applicant is committed to promoting dialogue with statutory and non-statutory consultees and the local community, seeking to engage with all those with an interest in the Proposed Development to provide transparency during the process.

4. Planning Policy Context

4.1 Introduction

4.1.1 The EIA will be progressed taking account of applicable legislation, policy and guidance. This chapter of the EIA Report will outline the planning policy framework followed by an overview of further legislation, policy and guidance pertinent to the Proposed Development.

4.1.2 The Section 36 application will be accompanied by a Planning Statement, which will set out the planning case for the Proposed Development with regards to national and local policies and other material considerations.

4.2 Regulatory Framework

4.2.1 The application for the Proposed Development would be made pursuant to Section 36 of the Electricity Act 1989 (as amended), as a generating station with capacity exceeding 50 MW.

4.2.2 The EIA Regulations provide the requirements for undertaking EIAs for developments to be consented under the Electricity Act 1989 (as amended). The EIA Report would be prepared in accordance with Schedule 4 of the Regulations.

4.3 Planning Policy and Guidance

4.3.1 There are legal, policy and advice documents which would be material considerations in the determination of the Section 36 application for the Proposed Development, including those noted in the following sections. National planning policy is contained within the current National Planning Framework (NPF) 3 and the Scottish Planning Policy (SPP). A revised draft National Planning Framework 4 (NPF4) was laid before the Scottish Parliament on 8th November 2022. Once adopted NPF4 will become the single national planning policy document, replacing both NPF3 and SPP and will have Development Plan status when it comes into force.

4.3.2 The EIA will be undertaken in line with national policy in place at the time of submission, anticipated to be NPF4.

Revised Draft Fourth National Planning Framework (NPF4)

4.3.3 On 8th November 2022, the Scottish Government laid the Revised Draft NPF4 (Scottish Government, 2022a) and supporting documents in the Scottish Parliament for approval within a 6-week period. This follows an earlier consultation on the Draft NPF4 (Scottish Government, 2021b) and associated parliamentary scrutiny from November 2021 to March 2022. The Revised Draft NPF4 is accompanied by an Explanatory Report that outlines the changes from Draft NPF4 (Scottish Government, 2021b) to the Revised Draft NPF4 (Scottish Government, 2022a).

4.3.4 At the time of writing, the Revised Draft NPF4 is undergoing final parliamentary consideration and expected to be subject to a final approval vote shortly. Thereafter, the Scottish Ministers are expected to proceed to adopt the final NPF4 expeditiously. Upon adoption and publication, the NPF4 will set out a new national policy position for spatial

planning and form part of the statutory Development Plan for the determination of planning applications.

4.3.5 The Revised Draft NPF4 is intended to provide the spatial strategy for Scotland to 2045 and takes account of the target of net zero emissions by 2045 set by the Scottish Government. Once NPF4 is adopted and published, there is a statutory requirement for it to be taken into account by planning authorities when preparing Local Development Plans (LDPs). It will replace NPF3 (Scottish Government, 2014a) and SPP (Scottish Government, 2014b).

4.3.6 The Revised Draft NPF4 includes a specific policy on the climate and nature crisis to ensure that they are appropriately recognised as priorities in all plans and decisions. The Revised Draft NPF4 now provides a strong framework for the deployment of renewable energy developments and identifies the need for strategic scale renewable energy developments, including offshore wind farms. The Revised Draft NPF4 also sets out a range of new policy tests, requirements and expectations for all developments.

National Planning Framework 3 (NPF3)

4.3.7 At the time of writing the NPF3 remains in place but as set out in the above Section is shortly expected to be replaced by National Planning Framework 4 (NPF4). NPF3 is therefore of limited relevance to this EIA. NPF4 will bring the National Planning Framework and Scottish Planning Policy (SPP) together as a formal part of the Development Plan and an integral part of the planning decision-making process.

4.3.8 NPF3 (June 2014) provides the statutory framework for Scotland's long term spatial development. It sets out the Scottish Government's spatial development priorities over a 20 to 30 year period and what is expected of the planning system and the outcomes it must deliver. NPF3 reaffirmed the Scottish Government's commitment to renewable energy targets (30% of overall energy demand from renewable sources by 2020) and recognises the important role of onshore wind in achieving these targets. The Framework supports the deployment of appropriately located onshore wind energy development.

Scottish Planning Policy (SPP)

4.3.9 SPP (June 2014) sets out national planning policies that reflect the priorities of the Scottish Ministers for the operation of the planning system and the development and use of land through sustainable economic growth. The SPP recognises that renewable energy generation including onshore wind will contribute to more secure and diverse energy supplies and support sustainable economic growth. The commitment to increase the amount of electricity generated from renewable sources including onshore wind is a vital part of the response to climate change.

4.4 Local Planning Policy and Guidance

Local Development Plan (LDP)

4.4.1 In considering the overall legal framework within which the Proposed Development would be assessed, the LDP should be a key consideration. However, Section 25 of the Town and Country Planning (Scotland) Act 1997, as amended by The Planning etc. (Scotland) Act 2006, is not engaged for applications pursuant to Section 36 of the Electricity Act 1989 (i.e. the LDP does not take primacy in the determination process).

4.4.2 The current Development Plans are:

- The Highland-wide LDP (HwLDP) (adopted April 2012). This covers the whole of the Highland Area, with the exception of the Cairngorms National Park; and
- The West Highland and Islands Local Development Plan (WHILDP) (2019).

4.4.3 In addition, HC have adopted a suite of Supplementary Guidance for Onshore Wind Energy as part of the Development Plan for Highland with the following of particular relevance for the Proposed Development:

- The Onshore Wind Energy Supplementary Guidance (2016) and its Addendum.

4.4.4 It is considered the applicable policies of the LDP are:

- Policy 67 Renewable Energy Development, taking account of the considerations in the Onshore Wind Energy Supplementary Guidance (2016);
- Policy 57 Natural, Built and Cultural Heritage, taking account of the level of importance of heritage features (international, national or local/regional); and
- Policy 61 Landscape, taking account of particular landscape characteristics.

5. Renewable Energy and Climate Change Policy Framework

5.1.1 The EIA will take account of applicable legislation, policy and guidance in relation to renewable energy. The following legislation and policy are relevant to the Proposed Development and would be considered in the EIA Report:

- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019;
- The Renewable Energy Directive (2009/28/EC);
- The EU 2030 Climate & Energy Policy Framework;
- Climate Change (Scotland) Act 2009;
- Low Carbon Economic Strategy for Scotland 2010;
- Low Carbon Scotland – Meeting the Emissions Reductions Targets 2013-2027;
- The Scottish Government Renewables Action Plan June 2009 (latest update March 2011);
- Electricity Generation Policy Statement 2013;
- 2020 Renewables Routemap June 2011 (latest update September 2015);
- Intended Nationally Determined Contributions of the EU and its Member States (2015);
- The Chief Planner Letter to all Heads of Planning (2015);
- The COP21 Paris Agreement (2015);
- The Fifth Carbon Budget (2016);
- The UK Industrial Strategy (2017);
- The UK Clean Growth Strategy (2017);
- The Scottish Energy Strategy 2017;
- Onshore Wind Policy Statement 2017;
- Special Report on Global Warming of 1.5°C (2018); Climate Change Plan 2018;
- Energy Statistics for Scotland – Q4 2020 Figures, 2021;
- 2030 Clean Energy Package;
- AR6 Climate Change 2021: The Physical Science Basis (2021);
- The Sixth Carbon Budget (December 2020); Scottish Government Climate Change Adaptation Programme: Second Progress Report, 2021;
- Climate Ready Scotland: Climate Change Adaptation Programme 2019 – 2024;
- Low Carbon Scotland: Climate Change Plan – Third Report on Proposals and Policies 2018-2032;
- Protecting Scotland's Future: the Government's Programme for Scotland 2020-2021;

- Draft Peatland and Energy Policy Statement (2016);
- Guidance on developments on Peatland (2017);
- Scottish Historic Environment Policy (April 2019);
- COP 26: The Glasgow Climate Pact, 2021; Carbon calculator for wind farms on Scottish peatland: factsheet, February 2022; and
- Proposed electricity generation developments: peat landslide hazard best practice guide, April 2017.

5.2 Potential Contribution of the Proposed Development to Government Objectives

5.2.1 The Scottish and UK legislative and policy framework on climate change is shaped by international climate change legislation. This incorporates binding targets in the reduction of greenhouse gas emissions and in the generation of energy from renewable sources.

5.2.2 In 2019, the Scottish Government amended the Climate Change (Scotland) Act 2009 through the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. The 2019 Act seeks to ensure Scotland achieves its ambition to reduce greenhouse gas emissions to a net-zero state by 2045. To achieve this ambition, Scotland will need considerably more renewable energy projects.

5.2.3 The Proposed Development would make an important and substantial contribution to achieving multiple existing targets regarding the deployment of renewable energy technologies and greenhouse gas emissions reduction in pursuit of climate change mitigation.

6. Landscape and Visual

6.1 Introduction

6.1.1 This chapter sets out the proposed scope of the Landscape and Visual Impact Assessment (LVIA) which will assess the likely significant effects, including cumulative effects of the Proposed Development on landscape and visual amenity receptors. The following related technical assessments would also be included:

- Residential Visual Amenity Assessment (RVAA);
- Night-time Lighting Visual Assessment; and
- Wild Land Assessment.

6.1.2 Consultees are requested to confirm the scope of this assessment and in particular comment on other known wind farm developments which should be included in the assessment (**Table 6.1**), the proposed viewpoint locations (**Table 6.2**), the assessment methodology (**Section 6.6** and **Appendix 6.1**) including scope of the RVAA, Wild Land Assessment and Night-Time Lighting Visual Assessment and matters that are proposed to be scoped out of this assessment (**paragraph 6.5.14**).

6.1.3 The chapter is supported by **Figures 6.1-6.6** in **Appendix A** and should be read in conjunction with **Chapter 2**: Project Description.

6.2 Relevant planning policy and technical guidance

6.2.1 The LVIA process would take account of national and local planning policy in relation to wind farm development, including the national planning requirements for those areas identified for wind farm development to be suitable for use in perpetuity. This also includes the Highland-wide Local Development Plan (HwLDP) (2012)[3], West Highlands and Islands LDP (2019)[4] as well as other strategic landscape planning guidance from Scottish Natural Heritage (SNH) / NatureScot (NS) and Highland Council (HC) (including THC's Onshore Wind Energy Supplementary Guidance (2016) (OWESG)[5].

6.2.2 Further information on Planning Policy is provided in **Chapter 4: Planning Policy Context**.

6.3 Baseline Conditions

6.3.1 The Development Site is undesignated and lies within an area dominated by moorland and surrounding coniferous forestry. In addition, it is remote from major settlements. The closest villages, Edinbane is located approximately 2km to the north of the Proposed Development whilst Dunvegan is located approximately 8km to the west of the Proposed Development. The Site sits within gently sloping and undulating upland moorland, partly contained by the higher ground of Ben Sca and Ben Aketil to the west, Ben Scudaig and Braon a' Mheallain to the south and Beinn a' Ghlinne Bhig and Ben Uigshader to the east.

[3] https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan
[4] https://www.highland.gov.uk/downloads/file/21199/westplan_adopted_september_2019
[5] https://www.highland.gov.uk/onshorewind

6.3.2 The existing Edinbane Wind Farm comprising 18 turbines is located within the Site. There are other existing wind farms in the vicinity including Ben Aketil comprising 12 turbines, just over 2km to the north-west, a single turbine, Tigh Ic Mhanais, to the north and two more single turbines, Sumardale and Meadale, further to the south. There are a number of other man-made influences in the wider landscape including farms and other properties, roads, coniferous forestry, transmission pylon lines, power station and wind farms.

Current Baseline

6.3.3 The 'host' landscape for the Proposed Development is an extensive area of Upland Sloping Moorland and Stepped Moorland Landscape Character Types (LCTs) which is defined by SNH in its 2019 Landscape Character Assessment.

6.3.4 Other neighbouring landscapes include the lower lying Farmed and Settled Lowlands – Skye and Lochalsh. The host landscapes, Upland Sloping Moorland and Stepped Moorland LCTs, are described as upland areas of moderate elevation on Skye. Landform within this landscape broadly undulates with moorland and coniferous forestry which combine to form a large-scale patchwork of contrasting colours and textures.

6.3.5 Surrounding land uses include upland grazing and coniferous forestry. The wider landscape is varied including areas of higher stepped moorland with high points along the Waternish peninsula to the north, the rounded hills north of Bracadale to the south-east and more dramatic landforms on the Duirinish peninsula, including Macleod's Tables to the west. The rugged upland areas contrast with settled coastal edges found around Loch Dunvegan, Loch Bay, Loch Snizort to the north and Loch Bracadale to the south.

6.3.6 Wind farm development is present within this area and cumulative assessment will be an important part of the LVIA. Wind farm development most relevant to the cumulative assessment is listed in **Table 6.1** and illustrated on **Figures 6.1 – 6.6** in **Appendix A.**

Future baseline

6.3.7 Further change to the baseline landscape is likely, as a result of new applications and / or eventual decommissioning or replacement of existing wind farms (including Edinbane Wind Farm) and their associated grid connections.

6.3.8 Forestry felling and re-stocking is also likely to change the nature of available views across this landscape from various receptors within the LVIA Study Area.

Table 6.1 Wind Farms relevant to the cumulative assessment

Reference	Name of wind farm	Number of wind turbines	Approximate distance from Proposed Development (m)	Height to blade tip (m)	Status
E01	Edinbane	18	0	100	Existing
E02	Ben Aketil	12	2,544	100	Existing
E03	Tigh Ic Mhanais *	1	2,929	46	Existing
E04	Sumardale	1	8,723	65.7	Existing
E05	Meadale	1	9,724	53.7	Existing

Reference	Name of wind farm	Number of wind turbines	Approximate distance from Proposed Development (m)	Height to blade tip (m)	Status
C01	Glen Ullinish	11	1,198	145 / 149.9	Consented
C02	Ben Sca	7	1,511	135	Consented
C03	Ben Sca Extension	2	3,044	149.9	Consented
C04	Beinn Mheadonach	4	8,100	120	Consented
No current submitted wind farm applications within the study area					
S01	Balmeanach	10	325	149.9	Scoping
S02	Glen Ullinish II	59	472	200	Scoping
S03	Ben Aketil Repowered and Extended	10	2,319	200	Scoping
S04	Beinn Mheadonach Re-Design	5	7,746	145	Scoping

* Micro generation turbine (25-50m) within 10km

6.4 Data Sources

6.4.1 A range of desk-based and site-based data will be sourced to undertake the LVIA and cumulative assessment, covering landscape and visual receptors and other cumulative wind farm development. The desk-based data will be drawn from Ordnance Survey maps and a range of document sources in addition to the relevant planning policy documents outlined in **Chapter 4**: **Planning Policy Context**.

Preliminary LVIA Study Area

6.4.2 A preliminary LVIA Study Area for the Proposed Development is illustrated in **Figure 6.1** in **Appendix A** in accordance with SNH guidance[6] for turbines ≥150 m to blade tip as proposed for the Development Site.

Landscape Receptor Data Sources

6.4.3 The landscape character of the Development Site and the proposed LVIA Study Area is described in the SNH Landscape Character Assessment, 2019.

6.4.4 There are nationally and locally designated landscapes within the LVIA Study Area. These and the special landscape qualities for which these areas are protected would be sourced as follows:

[6] Scottish Natural Heritage, February 2017. Visual Representation of Wind Farms: Good Practice Guidance, Version 2.2, page 12.

- National Scenic Areas: The Special Qualities of the National Scenic Areas: SNH Commissioned Report No. 374, 2010, and SNH's working draft 'Guidance for Assessing the Effects on Special Landscape Qualities', November 2018; and
- Assessment of Highland Special Landscape Areas, Horner + Maclennan with Mike Wood Landscape Architect, commissioned report for HC in partnership with SNH, June 2011.

6.4.5 Other areas of landscape interest include Wild Land Areas and Gardens and Designed Landscapes. The data for these receptors will be sourced from the following:

- Wild Land Areas, NS, 2017[7]; and
- Historic Environment Scotland, Inventory of Gardens and Designed Landscapes[8].

Visual Receptor Data Sources

6.4.6 Visual receptors, included in the LVIA are settlements and residential properties, transport routes and recreation routes such as the Core Path Network and outdoor community recreational facilities or places and tourist / visitor attractions and destinations. The locations of these will be sourced from Ordnance Survey maps, site survey information and the following sources:

- Scotland's Great Trails[9];
- Sustrans Cycle Network[10];
- Core Path Network and other promoted recreational routes;
- Historic Environment Scotland, National Trust and other sites open to the public[11];
- Walk Highlands Website[12]; and
- Other printed or web-based sources of tourist / recreational literature.

6.4.7 Cumulative information on other existing and consented wind farms and planning applications for other wind farm developments would be sourced from local authority and developer sources.

Other Technical Guidance

6.4.8 In addition, other technical and supporting guidance includes, but is not limited to the following:

- Landscape Institute and IEMA Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA 3);
- SNH, Visual Representation of Windfarms, Version 2.2, February 2017;
- SNH, Siting and Designing Windfarms in the Landscape, Version 3a, August 2017;
- SNH, Guidance: General pre-application and scoping advice for onshore wind farms, (September 2020);

[7] https://www.nature.scot/professional-advice/landscape/landscape-policy-and-guidance/landscape-policy-wild-land
[8] http://www.historic-scotland.gov.uk/
[9] http://www.snh.gov.uk/enjoying-the-outdoors/where-to-go/routes-to-explore/scotlands-great-trails/
[10] http://www.sustrans.org.uk/ncn/map/national-cycle-network/using-network/route-numbering-system
[11] http://www.historic-scotland.gov.uk/
[12] http://www.walkhighlands.co.uk

- SNH, Guidance: Spatial Planning for Onshore Wind Turbines – natural heritage considerations, Version 3a, June 2015;
- NS, Assessing Impacts on Wild Land Areas – Technical Guidance, 2020;
- NS, Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments, 2021;
- NS, Landscape Sensitivity Assessment Guidance, April 2022;
- University of Newcastle for SNH: Visual Assessment of Windfarms: Best Practice, Commissioned Report F01AA303A, 2002;
- Landscape Institute, Residential Visual Amenity Assessment: Technical Information Note, 15 March 2019;
- Landscape Institute, Visual Representation of Development Proposals Technical Guidance Note 06/19, September 2019;
- Scottish Renewables, SNH, Scottish Environment Protection Agency, and the Forestry Commission Scotland, Good Practice during Windfarm Construction: Version 3, 2015;
- THC, Visualisation Standards for Wind Energy Developments, July 2016;
- CAA, Article 222 of the UK Air Navigation Order (ANO) 2016; and
- CAA Policy Statement, Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m Above Ground Level.

Field Surveys / Modelling

6.4.9 Field surveys will be undertaken to observe, assess and record landscape and visual receptors and provide a photographic record of each assessment viewpoint in accordance with SNH, Visual Representation of Wind Farms: Good Practice Guidance, Version 2.2. The field studies will include documented visits to all relevant landscape and visual receptors to assess the likely effects of the Proposed Development in the field, checking data, 'ground truthing' and examining landscape elements, characteristics / character and views / visual amenity.

6.4.10 Computer modelling of the landscape / landform, other cumulative development and the Proposed Development will be undertaken using a variety of software to support the LVIA and cumulative assessment.

6.5 Scope of Assessment

Zone of Theoretical Visibility and Viewpoint Analysis

6.5.1 The Zone of Theoretical Visibility (ZTV) analysis is used to assist the design and further define the scope of the assessment and is used to indicate the areas from where it may be theoretically possible to view all or some of the proposed turbines. The ZTVs have been calculated using ReSoft WindFarm computer software to produce an area of potential visibility of any part of the proposed turbines, calculated to turbine blade-tip and hub-height, or other selected infrastructure. The ZTV does not however take account of built development and vegetation, which can significantly reduce the area and extent of actual visibility in the field and as such provides the limits of the visual assessment Study Area. As a result, there may be an over-estimate of the theoretical visibility with roads,

tracks and footpaths in the wider setting which, although shown as falling within the ZTV, have restricted viewing opportunities since they are heavily screened or filtered by banks, walls and vegetation. The ZTVs therefore provide a starting point in the assessment process and accordingly tend towards giving an over-estimated or maximum theoretical visibility of the proposed turbines.

6.5.2 A preliminary ZTV map has been produced and is calculated to show the area of theoretical visibility of the proposed turbines based on an indicative 19 turbine layout of up to 200m height as follows:

- **Figure 6.1** in **Appendix A** illustrates the ZTV calculated to blade tip height at 1:350,000 scale across the 45km LVIA Study Area and provides an overview of the theoretical extent of visibility. This figure also illustrates the viewpoint locations and cumulative wind farms;
- **Figure 6.2** in **Appendix A** illustrates the ZTV calculated to hub height at 1:350,000 scale across the 45km LVIA Study Area and provides an overview of the theoretical extent of visibility. This figure also illustrates the viewpoint locations and cumulative wind farms;
- **Figure 6.3** in **Appendix A** illustrates the comparative ZTV calculated to blade tip height at 1:350,000 scale across the 45km LVIA Study Area and provides a comparative illustration of the existing Edinbane Wind Farm and the Proposed Development. This figure also illustrates the viewpoint locations and cumulative wind farms.

6.5.3 For the avoidance of doubt, areas outwith the coloured areas of the ZTV would have no view of the Proposed Development and landscape and visual receptors within these areas are consequently scoped out of the LVIA.

Confirmation of LVIA Study Area

6.5.4 The LVIA Study Area for the Proposed Development (**Figure 6.1** in **Appendix A**) is based on a 47,368m radius circle that allows a minimum of 45km distance from an indicative 19 turbine layout in accordance with SNH guidance[13]. It represents an over-estimated or maximum theoretical visibility of the Proposed Development. As illustrated in **Figures 6.1-6.3** in **Appendix A** much of the area between 30-45km includes areas of sea and remote geographical regions to the north, south-west, south-east and east which would either have no visibility or very limited visibility of the Proposed Development at very long distance. Visibility from the remote geographical regions of the Western Isles to the north-west would also have very limited visibility of the Proposed Development at over 45km. For these reasons it is proposed to reduce the main LVIA Study Area to 30km distance from the Proposed Development and to focus the assessment of likely and potential significant effects on receptors within this area and the extent of the blade tip ZTV.

6.5.5 The detailed LVIA study area would be defined by the potential threshold for significant effects based on the viewpoint analysis and would include local / regional level receptors such as local LCTs, local landscape designations, main settlements, transport routes, 'B' and 'C' class roads, core paths / local recreational routes and local attractions. The viewpoint analysis and field survey will be used to confirm if a receptor can be scoped out and viewpoint analysis used to identify a conservative distance or 'threshold' for significant landscape and visual effects.

[13] Scottish Natural Heritage, February 2017. Visual Representation of Wind Farms: Good Practice Guidance, Version 2.2

Confirmation of Cumulative LVIA Study Area

6.5.6 In accordance with SNH guidance[14] on cumulative assessment, information on existing and consented wind farms and other planning applications for other wind farm developments would be sourced from within a 'search area' of 60km in order to inform the cumulative assessment of effects on landscape and visual receptors within the 45km radius LVIA Study Area. As noted in paragraph 6.5.4 above, it is also proposed to reduce the cumulative search area to 30km in line with the main LVIA Study Area.

6.5.7 The current cumulative situation is indicated in **Table 6.1** and illustrated in **Figures 6.1-6.6** in **Appendix A,** showing the locations of wind farms that are operational, under construction, consented or which are at application stage and where the turbines are greater than 50m to blade tip. It is to be noted that there are no wind farms currently at the application stage (in the planning portal or at appeal). Micro-generation turbines (25-50m) within 10km have been included whilst single turbines beyond 10km are excluded. In line with SNH guidance, scoping stage wind farms will not be included with the exception of those within 10km of the Proposed Development including Balmeanach, Glen Ullinish II, Ben Aketil Repowered and Extended, and Beinn Mheadonach Re-Design which will be included in the viewpoint wirelines.

Viewpoint Selection and Visualisations

6.5.8 A range of viewpoints have been proposed (as illustrated on **Figures 6.1-6.3** in **Appendix A**) and consultees are requested to confirm the viewpoint selection set out in **Table 6.2.** The proposed viewpoints have also been drawn from the Environmental Statement of the existing Edinbane Wind Farm, and other neighbouring wind farms currently at the scoping stage.

- Visualisations would be prepared for each viewpoint to accord with NS guidance[15] and THC guidance[16]. The table includes the following information provided for each viewpoint:
- Viewpoint name and number;
- Grid coordinates;
- Distance to nearest turbine;
- View direction;
- Viewpoint type and receptor;
- Landscape character type at viewpoint;
- Landscape designation at viewpoint;
- Visualisation method; and
- Viewpoint for nearby wind farms.

6.5.9 There are also a number of specific receptor locations within 20km which would have No View or very limited visibility of the Proposed Development (wirelines have been explored from these locations and most have been discounted from the viewpoint list). Wirelines for

[14] Scottish Natural Heritage, March 2012. *Guidance: Assessing the Cumulative Impacts of Onshore Wind Energy Developments*.
[15] Scottish Natural Heritage, February 2017. Visual Representation of Wind Farms: Good Practice Guidance, Version 2.2
[16] The Highland Council, July 2016, Visualisation Standards for Wind Energy Developments.

all these locations will also be included in an appendix to the LVIA in the EIA Report based on the final design:

- Settlements of Portree, Drynoch, Bracadale, Stein, Halistra, Trumpan, Gilen, Lusta, Claigan, Milovaig, Lephin, Ferini quarrie, Heatherfield, Camastianavaig, Grealin, Linicro, Scuddaborg, Totscore, Balgown, Lealt, Marishader, Maligar, Eynort, Talisker and Glengrasco (screened by landform and vegetation);
- The majority of the A855, B886, B883 and much of the B885;
- The majority of the Skye Trail;
- Dunvegan Castle;
- Claigan Coral Beach;
- Sligachan Hotel and Campsite;
- Fairy Glen and Quiraing;
- Raasay House;
- Almost the entire Trotternish NSA (99% outwith ZTV); and
- 86% of the Duirinish WLA and 90% of the Cuillins WLA / NSA outwith the ZTV.

Table 6.2 Proposed LVIA Viewpoints

VP No.	Viewpoint	Grid coordinates (Easting / Northing)	Approximate distance to Proposed Development (nearest turbine) (m)	View direction	Viewpoint Type / Receptor	Landscape Character Type at viewpoint	Landscape Designation at viewpoint	Visualisation Method	Viewpoint for nearby wind farms
*1**	*Edinbane*	*134492, 851842*	*3,330*	*South*	*Specific - residents*	*Farmed and Settled Lowlands - Skye & Lochalsh*	-	*Photomontage*	*Edinbane, Ben Ben Aketil, Balmeanach, Ben Sca*
2	A850 The Aird	139819, 851105	4,023	South-west	Illustrative – road users, nearby residents	Farmed and Settled Lowlands - Skye & Lochalsh	-	Photomontage	Glen Ullinish II
*3**	*A863 Ose*	*131266, 841085*	*5,115*	*North-east*	*Illustrative – road users, nearby residents, local landscape designation*	*Farmed and Settled Lowlands - Skye & Lochalsh*	*North West Skye SLA*	*Photomontage*	*Glen Ullinish II, Edinbane*
4	A850 between Dunvegan and Edinbane	129913, 850502	5,599	South-east	Specific – road users	Upland Sloping Moorland	-	Photomontage	Edinbane, Ben Aketil, Ben Sca, Balmeanach
5	B885 west of Glengrasco	143375, 845017	7,319	West	Specific – road users	Low Smooth Moorland	-	Photomontage	Glen Ullinish II, Edinbane

VP No.	Viewpoint	Grid coordinates (Easting / Northing)	Approximate distance to Proposed Development (nearest turbine) (m)	View direction	Viewpoint Type / Receptor	Landscape Character Type at viewpoint	Landscape Designation at viewpoint	Visualisation Method	Viewpoint for nearby wind farms
*6**	*Roag*	*127087, 844000*	*7,807*	*East / North-east*	*Specific – residents, local landscape designation*	*Farmed and Settled Lowlands - Skye & Lochalsh*	*North West Skye SLA*	*Photomontage*	*Ben Aketil, Balmeanach*
*7**	*A850 / A87 Junction*	*144346, 848110*	*7,927*	*West*	*Illustrative – road users, nearby residents*	*Farmed and Settled Lowlands - Skye & Lochalsh*	-	*Photomontage*	*Glen Ullinish II, Edinbane, Ben Ben Aketil*
8	Dunvegan	125783, 847796	9,162	East	Specific - residents	-	-	Photomontage	Ben Aketil
9	Fiskavaig	132670, 833930	10,772	North / North-east	Specific – residents, local landscape designation	Farmed and Settled Lowlands - Skye & Lochalsh	North West Skye SLA	Photomontage	Balmeanach
10	A87 south of Earlish	138947, 859675	11,064	South-west	Specific – road users	Stepped Moorland	-	Photomontage	Edinbane, Ben Sca
11	A87 Portree	147148, 844766	11,097	West	Specific – road users	Low Smooth Moorland	-	Photomontage	Edinbane
12	Healabhal Mhor (Macleods Table North)	121998, 844513	12,800	East	Specific – walkers, local landscape	Stepped Hills	North West Skye SLA, Duirinish WLA	Photomontage	Edinbane, Ben Aketil, Ben Sca, Balmeanach, Glen Ullinish II

VP No.	Viewpoint	Grid coordinates (Easting / Northing)	Approximate distance to Proposed Development (nearest turbine) (m)	View direction	Viewpoint Type / Receptor	Landscape Character Type at viewpoint	Landscape Designation at viewpoint	Visualisation Method	Viewpoint for nearby wind farms
					designation, WLA				
13	The Storr	149525, 854055	14,050	South-west	Specific – walkers, local landscape designation	Landslide Edge and Undulating Ridge	Trotternish and Tianavaig SLA	Photomontage	Edinbane, Ben Aketil I, Balmeanach, Ben Sca
14	Uig (Idrigill)	138124, 863825	15,023	South-west	Illustrative – residents, visitors, ferry users, local landscape designation	Farmed and Settled Lowlands - Skye & Lochalsh	Trotternish and Tianavaig SLA	Photomontage	Balmeanach, Ben Aketil
15	Totaig	12001, 850547	15,268	South-east	Specific – residents, local landscape designation	Farmed and Settled Lowlands - Skye & Lochalsh	North West Skye SLA	Photomontage	Balmeanach, Ben Aketil
16	Beinn Edra	145561, 862683	16,523	South-west	Specific – walkers, NSA, local landscape designation	Landslide Edge and Undulating Ridge	Trotternish and Tianavaig SLA, Trotternish NSA	Photomontage	Balmeanach, Ben Aketil, Ben Sca
17	Bruach na Frithe	146087, 825218	22,091	North-west	Specific – walkers, NSA, WLA	Angular Mountain	Cuillins NSA, WLA	Wireline only	Glen Ullinish II

VP No.	Viewpoint	Grid coordinates (Easting / Northing)	Approximate distance to Proposed Development (nearest turbine) (m)	View direction	Viewpoint Type / Receptor	Landscape Character Type at viewpoint	Landscape Designation at viewpoint	Visualisation Method	Viewpoint for nearby wind farms
						Range - Skye & Lochalsh			

*Night-time Illustrated Viewpoint (1, 3, 6 & 7)

Potential receptors

6.5.10 Landscape and visual receptors within the LVIA Study Area, most likely to be significantly affected tend to be those which are of higher sensitivity, located closest to the Proposed Development, incurring a direct and / or higher magnitude or level of effect. Viewpoint analysis and site survey, which includes an assessment of sensitivity and magnitude, will be used as part of the assessment to identify those receptors which are most likely to be significantly affected.

Likely significant effects

6.5.11 The likely significant landscape, visual and cumulative effects that will be taken forward for assessment in the EIA Report are summarised in **Table 6.3**.

6.5.12 It is important to note that whilst some effects can be identified as likely to be significant at this pre-assessment stage, there is the potential for other receptors to be significantly affected, subject to further details of the LVIA and cumulative assessment. Receptors which are unlikely to be significantly affected and may, subject to further assessment, be excluded from detailed assessment in the LVIA.

Table 6.3 Likely significant landscape, visual and cumulative effects

Stage of Development and Activity	Likely significant effect	Receptor
Landscape and Cumulative Landscape Effects		
Construction: **Site preparation and construction of associated infrastructure (tracks, borrow pits, control buildings / sub-stations, contractors' facilities, site access and electrical cabling).**	Direct localised effects on the host landscape character, characteristics and landscape elements may be significant.	Landscape character: *Upland Sloping Morland and Stepped Moorland LCTs*
Construction and Operation: **Turbine erection and operation.**	Direct effects on the host landscape character, characteristics and potentially the landscape elements are likely to be significant within ~2-3km. Indirect effects related to the visibility of the turbines and their effect on landscape character and perceptual characteristics have the potential to be significant. Based on the preliminary ZTV, none of the nationally (NSAs / WLAs) or the majority of locally designated landscapes (SLAs) are likely to experience significant effects, especially due to the presence of other wind farms located between the	Landscape character: *Upland Sloping Morland and Stepped Moorland LCTs* Other Landscape character units: *Farmed and Settled Lowlands - Skye & Lochalsh* Greshornish SLA

Stage of Development and Activity	Likely significant effect	Receptor
	designations and the Proposed Development.	
Decommissioning: Removal of turbines and associated infrastructure such as control buildings / sub-stations.	Effects unlikely to be significant and will largely reverse the effects of turbine construction and operation.	
Visual and Cumulative Visual Effects		
Construction: Site preparation and construction of associated infrastructure (tracks, borrow pits, control buildings / sub-stations, contractors' facilities, site access and electrical cabling).	Effects on views and visual amenity resulting from visibility of the proposed wind turbines within ~1-2km distance, subject to detailed viewpoint analysis.	Occasional walkers on Core Path in south Small number of residential properties
Construction and Operation: Turbine erection and operation.	Effects on views and visual amenity resulting from visibility of the proposed wind turbines within ~5-10km distance, subject to detailed viewpoint analysis. Views of the proposed aviation warning lights and adverse effects on night-time views within ~5-10km distance, subject to detailed viewpoint analysis and the proposed lighting strategy.	A small number of villages and residential properties Roads including parts of the A850, A863 and A87 Local recreational routes Local visitor attractions
Decommissioning: Removal of turbines and associated infrastructure such as control buildings / sub-stations.	A reduction in the operational effects on views and visual amenity resulting from no visibility of the proposed wind turbines.	A small number of villages and residential properties Roads including parts of the A850, A863 and A87 Local recreational routes Local visitor attractions

Potential effects proposed to be scoped out of further assessment

6.5.13 As a result of the characteristics of the Development Site, baseline receptors and the Proposed Development, it is considered that some receptors would not be significantly affected in the context of the EIA Regulations. These receptors / effects can therefore be scoped out from further assessment in the EIA Report as follows:

- LVIA Wider and Detailed Study Area:
  - Limit the wider LVIA Study Area for the landscape, visual and cumulative assessment up to 30km following analysis of the blade tip ZTV (due to predominance of areas of sea and remote geographical regions with very limited visibility of the Proposed Development beyond this).
  - The detailed LVIA study area would be defined by the potential threshold for significant effects based on the viewpoint analysis and would include local /

regional level receptors such as local LCTs, local landscape designations, main settlements, transport routes, 'B' and 'C' class roads, core paths / local recreational routes and local attractions. The viewpoint analysis and field survey will be used to confirm if a receptor can be scoped out and viewpoint analysis used to identify a conservative distance or 'threshold' for significant landscape and visual effects.

- Cumulative Assessment:
  - Limit the cumulative baseline of all operational and consented wind energy development and other applications for wind energy development to within 30km of the Development Site to match the LVIA Study Area; and
  - Exclude other scoping stage and pre-application schemes in line with SNH guidance, except for those within 5-10km of the Proposed Development. These schemes will also be included on the viewpoint wirelines.
- Receptors outwith the ZTV
  - All receptors within the Study Area that are outwith the blade tip ZTV would have no view of the Proposed Development.
- National Scenic Areas
  - Effects on the Special Landscape Qualities of all NSAs within the Study Area are proposed to be excluded from the assessment due to the very limited visibility and long intervening distance of the Proposed Development. This includes the Trotternish NSA located 15km north-east of the Proposed Development which is almost completely outwith the ZTV, and the Cuillins NSA located beyond 20km to the south of the Proposed Development (90% outwith ZTV), and has other existing and consented wind farms located between the NSA and the Proposed Development limiting the potential for notable effects on their identified Special Landscape Qualities.
- Wild Land Areas
  - With the exception of the Duirinish WLA, effects on the Wild Land Qualities of all remaining WLAs within the Study Area are proposed to be excluded from the assessment due to the very limited visibility and long intervening distance of the Proposed Development. This includes the Cuillins WLA located beyond 18km to the south of the Proposed Development (90% outwith ZTV) and has other existing and consented wind farms located between the WLA and the Proposed Development limiting the potential for notable effects on their identified wildness qualities.
- Highland Special Landscape Areas
  - With the exception of North West Skye, Greshornich and Trotternish and Tianavaig SLAs, effects on the Special Landscape Qualities of all remaining SLAs within the Study Area are proposed to be excluded from the assessment due to the very limited visibility and long intervening distance of the Proposed Development.

6.6 Assessment Methodology

6.6.1 A summary of the proposed landscape, visual, Night-time Lighting Assessment, RVAA and Wild Land Assessment methodology is set out below with the full methodology in **Appendix B**.

Integrated Design and Assessment

6.6.2 Design is an integrated part of the LVIA process as part of iterative design and assessment. In this case the LVIA and any associated design and mitigation would work with closely with forestry specialists to ensure that the LVIA takes full account of the adjacent Forest Design Plans and realises opportunities where possible for landscape mitigation and enhancement.

6.6.3 The methodology for the LVIA would be undertaken in accordance with the Landscape Institute and IEMA Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA 3), and other best practice guidance.

Assessment of Landscape Effects

6.6.4 Landscape Effects are defined by the Landscape Institute in GLVIA 3, paragraphs 5.1 and 5.2 as follows:

"An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern ... is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. ... The area of landscape that should be covered in assessing landscape effects should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner."

6.6.5 The potential landscape effects occurring during the construction, operational and decommissioning periods may therefore include, but are not restricted to, the following:

- Changes to landscape elements: the addition of new elements (wind turbines) or the removal of existing elements such as trees, vegetation and buildings and other characteristic elements of the landscape character type;
- Changes to landscape qualities: degradation or erosion of landscape elements and patterns and perceptual characteristics, particularly those that form key characteristic elements of landscape character types/areas or contribute to the landscape value;
- Changes to landscape character: landscape character may be affected through the incremental effect on characteristic elements, landscape patterns and qualities (including perceptual characteristics) and the addition of new features, the magnitude of which is sufficient to alter the overall landscape character within a particular area;
- Changes to designated landscapes: Including nationally and locally designated landscapes and WLAs that would affect the special landscape qualities underpinning these areas and their integrity; and
- Cumulative landscape effects: where more than one wind farm may lead to a potential landscape effect.

6.6.6 Development may have a direct effect on the landscape as well as an indirect effect which would be perceived from the wider landscape, outside the immediate site area and its associated landscape character/ designation. Landscape effects also have to be recognised in terms of natural and man-made processes which can change or alter the landscape over time.

Assessment of Visual Effects

6.6.7 Visual Effects are concerned wholly with the effect of the development on views, and the general visual amenity, and are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows:

"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

6.6.8 Visual effects are identified for different receptors (people) who would experience the view(s) at their places of residence, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- Visual effect: a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view(s); and
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

6.6.9 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of each visual receptor (or range of sensitivities for receptor groups) and the magnitude of change that would be brought about by the construction, operation and decommissioning of the Proposed Development.

Cumulative Landscape and Visual Impact Assessment

6.6.10 The assessment of cumulative effects is essentially the same as for the assessment of the landscape and visual effects of the Proposed Development in isolation, in that the level of landscape and visual effect is determined by assessing the sensitivity of the landscape or visual receptor and the magnitude of change. Cumulative assessment however considers the magnitude of change posed by multiple developments.

6.6.11 The cumulative assessment would accord with NS guidance (2021) and will be prepared to ensure that, as well as the effects of the Proposed Development (LVIA), the 'additional' cumulative effects and the 'combined' cumulative effects (CLVIA) are also reported to account for two cumulative Scenarios as follows:

- Proposed Development:

  Assessed on an individual basis (the LVIA). This part of the assessment may take account of other existing forms of wind farm development that may be present in the landscape, whilst recognising that their influence on landscape character is likely to be time limited. It does not consider the additional or combined cumulative effects and only reports of the effect of the proposed development alone;

- Scenario 1: Existing + Consented + the Proposed Development:

  The additional and combined cumulative effects of the existing and consented wind energy developments with the Proposed Development will be assessed.

- Scenario 2: Existing + Consented + Applications + the Proposed Development:

  The additional and combined cumulative effects of the existing and consented wind energy developments and live applications (which would include schemes at planning appeal), with the Proposed Development will be assessed.

6.6.12 In addition, the cumulative assessment takes account of the timescales, as far as practicable, for the operation of the existing and consented developments and assumes that these will be decommissioned within the operational life of the Proposed Development.

Determining the Significance of Effects

6.6.13 Essentially, the level of landscape and visual effect (and whether this is significant) is determined by assessing the sensitivity of the landscape or visual receptor and the magnitude of change likely to be brought about by the Proposed Development. The time limited period for the assessment would cover the construction of the Proposed Development, its operation period, and decommissioning. The assessment process would include iterative design and assessment, that would have regard to plan for the Proposed Development as though permanent and further assessment of any remaining, residual time limited effects that could not otherwise be mitigated or 'designed out'.

6.6.14 In accordance with the EIA Regulations, it is important to determine whether the predicted effects resulting from the Proposed Development are likely to be significant. Significant landscape and visual effects in most cases, relate to all those effects that result in a 'Major' or a 'Major / Moderate' effect as indicated in **Table 6.4.** In some circumstances, 'Moderate' levels of effect also have the potential, where the assessor so judges, to be considered as significant and these judgements are also highlighted in bold and explained as part of the assessment, where they occur.

6.6.15 A distinction has also been made between there being a variable 'range' of effects on a receptor, which has been expressed as 'Moderate to Negligible' for example.

6.6.16 The type of effect is also considered and may be direct or indirect; temporary or permanent (reversible); cumulative; and positive, neutral or negative. The assessment unavoidably involves a combination of both quantitative and subjective assessment and wherever possible a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach.

Table 6.4 Evaluation of Landscape and Visual effects

Magnitude of Change	**Landscapes and Visual Sensitivity**			
	High	Medium	Low	Very Low
High	Major	Major / Moderate	*Moderate*	Not used
High - Medium	Major	Major / Moderate	*Moderate*	
Medium	Major / Moderate	*Moderate*	Minor	
Medium - Low	Major / Moderate	*Moderate*	Minor	
Low	*Moderate*	Minor	Negligible	
Low – Very Low	*Moderate*	Negligible	Negligible	
Very Low	Minor	Negligible	Negligible	
Zero	None / No View			

Residential Visual Amenity Assessment

6.6.17 Residential amenity is a planning matter that involves a wide number of effects (such as noise and shadow flicker) and benefits, of which residential visual amenity is just one

component. A RVAA will be undertaken to assess effects on residential visual amenity likely to be experienced at residential properties within 2km of the Development Site. The RVAA will accord with the advice in GLVIA 3, the Landscape Institute's Residential Visual Amenity Assessment: Technical Guidance Note, 2019.

6.6.18 As a minimum the visual effects on the views from each property included in the assessment will be illustrated by a wireline.

Night-time Lighting Visual Assessment

6.6.19 Aviation warning lights attached to turbine hubs and towers are required on all proposed wind turbines ≥150 m in accordance with Article 222 of the UK Air Navigation Order (ANO) 2016, subject to any proposed lighting mitigation strategy which would be agreed with the CAA prior to undertaking the assessment. A proportionate Night-Time Assessment of the proposed aviation lighting will be undertaken to accord with SNH guidance[17] and focused on night-time visual effects. Night-time effects on landscape receptors are proposed to be scoped out, however, landscape effects will be included as part of the Night-time Wild Land Assessment. The assessment would be supported by maps indicating the ZTV of any proposed aviation warning lights and 4No. Night-time Viewpoints. However, in accordance with the SNH Guidance, all 17 viewpoints reported in **Table 6.2** will have the lit turbines noted on the wirelines. The proposed Night-Time Viewpoints have been selected as being representative of locations where there are likely to be people at night and include roads and settlements (and cover different directions and distances) as follows:

- Viewpoint 1 – Edinbane;
- Viewpoint 3 – A863 Ose;
- Viewpoint 6 – Roag; and
- Viewpoint 7 – A850 / A87 Junction, Borve.

6.6.20 A night-time ZTV of the turbine lighting positions at hub height and half tower height would accompany the visualisations which would aid the assessment.

6.6.21 The extent of the study area is likely to be restricted to 10-15km from the outer turbine positions according to the technical criteria of the proposed candidate light fixtures.

Duirinish Wild Land Assessment (day and night-time effects)

6.6.22 A separate Wild Land Assessment will be conducted for the Duirinish WLA covering both day and night-time effects. The WLA is located approximately 11.5km west of the Proposed Development at its closest point.

6.6.23 The assessment will be guided by the SNH, Assessing Impacts on Wild Land Areas – Technical Guidance, 2020; and the published WLA description:

- NatureScot, Description of Wild Land Area 22: Duirinish, 2017.

6.6.24 The Wild Land Assessment will take account of all other cumulative wind farm development shown on **Figure 6.4**. We have also reviewed and considered other sites in the wider area that were refused or consented.

6.6.25 **Figure 6.4** illustrates the theoretical visibility (tip height) of the Proposed Development within the Duirinish WLA.

[17] NatureScot, General pre-application and scoping advice for onshore wind farms, September 2020

6.6.26 The ZTV pattern reflects the underlying landform within the Duirinish WLA and the percentages of theoretical visibility cover are summarised as follows:

- Total ZTV (to blade tip) coverage accounts for 14% of Duirinish WLA (86% outwith ZTV); and
- Total ZTV (to hub height) coverage accounts for 13% of Duirinish WLA (87% outwith ZTV).

6.6.27 Given the very limited visibility of the Proposed Development, limited to the eastern edge of the WLA, it is proposed to illustrate WLA 22 from one viewpoint (photomontage) (viewpoint 12) which is proportionate, and is also included as part of the LVIA viewpoint selection. A number of other viewpoint locations on the eastern edge have been examined as wirelines although it is not proposed to illustrate all of these given the similar views as viewpoint 12.

6.6.28 The visibility of the Proposed Development is largely restricted to eastern edge (and eastern hill summits – Macleod's Tables). One viewpoint is proposed as follows:

- Wild Land Viewpoint A: The summit of Healabhal Mhor (Macleods Table North) (also identified as LVIA viewpoint 12) (12.8km distance) – visibility restricted to summit top and an area of the eastern ridge near the summit. This viewpoint will be illustrated as a photomontage and will be represented as a daytime viewpoint.

6.6.29 There is no visibility of the Proposed Development from any valley areas within the WLA.

6.6.30 In previous WLA assessments NS have agreed that some of the qualities included in the WLA descriptions should be excluded as they only relate to physical characteristics that cannot be affected by the Proposed Development beyond the WLA boundary for example. Only one of the two qualities for WLA 22 are currently proposed to be included in the assessment, as follows:

- Extensive inland peatland, with a stepped landform profile that rises to awe-inspiring distinctive hills and strongly influences accessibility.

6.6.31 The remaining quality relating to "coastal edge, natural features, open views to sea and dynamic weather conditions' within the WLA" is proposed to be excluded from the assessment given neither of these areas within the WLA descriptions would be directly affected by the Proposed Development.

6.6.32 We request that NS confirm which of the WLA 22 qualities should be assessed.

6.6.33 Night-time effects on the wild land qualities of the Duirinish WLA would be included as part of a Night-time Wild Land Assessment. The hub height visibility of the Proposed Development is limited to elevated summits and the eastern ridge within the WLA. The most obvious viewpoint locations would be from hill tops which poses a significant increased health and safety risk to undertake viewpoint photography at night. Furthermore, it is unlikely that walkers will be on the popular hill summits at night. Even at sunset during the summer this would require walkers to be on the summit at 10-11pm during this season for example. The Night-time Wild Land Assessment will therefore be supplemented by night-time photographs from safe, publicly accessible lower lying locations near the edges of or within the WLAs.

7. Historic Environment

7.1 Introduction

7.1.1 This chapter considers the historic environment impacts associated with the Proposed Development. It describes the key considerations relating to the historic environment on and surrounding the Development Site, including the archaeological and built heritage potential of the surrounding landscape. The chapter should be read in conjunction with **Chapter 2**: **Project Description**.

7.2 Relevant legislation, planning policy, technical guidance

Planning Policy Context

7.2.1 In addition to those contained within Scottish Planning Policy (SPP) and the National Planning Framework 3 (NPF3) and the Revised Draft NPF4, relevant national policies are contained within the Historic Environment Policy for Scotland (HEPS) and advice relating to archaeological matters is detailed within Historic Environment Scotland's (HES) Managing Change in the Historic Environment guidance note series.

7.2.2 The current Development Plan for the Development Site is the Highland-wide Local Development Plan (HwLDP) (adopted in April 2012), supplemented by the West Highland and Islands Local Development Plan (WHILDP). A review of the HwLDP was commenced in 2016 before being halted in 2017 following the publishing of the Scottish Government's Planning Bill. HC are inputting to NPF4 and expect to take forward review of the HwLDP in 2022.

7.2.3 A summary of the relevant planning policies is given in **Table 7.1.**

Table 7.1 Planning policy issues relevant to historic environment

Policy reference	Policy issue
National planning policies	
SPP, Paragraph 169	This identifies a number of considerations which are likely to be relevant when determining the Proposed Scheme, including *"impacts on the historic environment, including scheduled monuments, listed buildings and their settings"*.
SPP: Valuing the Historic Environment Subject Policy, Paragraph 137	This states that planning should *"promote the care and protection of the designated and non-designated historic environment (including individual assets, related settings and the wider cultural landscape)"*.
SPP: Valuing the Historic Environment Subject Policy, Paragraph 140	This requires the siting and design of proposed developments to take account of *"all aspects of the historic environment"*.
SPP: Valuing the Historic Environment Subject Policy, Paragraph 141	This relates to listed buildings, stating that *"where planning permission and listed building consent are sought for development to, or affecting, a listed building, special regard must be given to the importance of preserving and*

Policy reference	Policy issue
	enhancing the building, its setting and any features of special architectural or historic interest. The layout, design, materials, scale, siting and use of any development which will affect a listed building, or its setting should be appropriate to the character and appearance of the building and setting".
SPP: Valuing the Historic Environment Subject Policy, Paragraph 143	This relates to conservation areas, stating that *"proposals for development within conservation areas and proposals outwith which will impact on its appearance, character or setting, should preserve or enhance the character and appearance of the conservation area".*
SPP: Valuing the Historic Environment Subject Policy, Paragraph 145	This relates to scheduled monuments, stating that *"where there is potential for a proposed development to have an adverse effect on a scheduled monument or on the integrity of its setting, permission should only be granted where there are exceptional circumstances".*
SPP: Valuing the Historic Environment Subject Policy, Paragraph 148	In relation to gardens and designed landscapes, paragraph 148 states that *"planning authorities should protect and, where appropriate, seek to enhance gardens and designed landscapes included in the Inventory of Gardens and Designed Landscapes and designed landscapes of regional and local importance".*
SPP: Valuing the Historic Environment Subject Policy, Paragraph 150	This relates to archaeology, stating that *"planning authorities should protect archaeological sites and monuments as an important, finite and non-renewable resource and preserve them in situ wherever possible. Where in situ preservation is not possible, planning authorities should, through the use of conditions or a legal obligation, ensure that developers undertake appropriate excavation, recording, analysis, publication and archiving before and/or during development".*
SPP: Valuing the Historic Environment Subject Policy, Paragraph 151	In relation to historic assets which are not afforded statutory protection, this paragraph states that *"planning authorities should protect and preserve significant resources as far as possible, in situ wherever feasible".*
HEPS HEP1	Development decisions should take the significance of the historic environment into account.
HEPS HEP2	The historic environment should be protected so that it can be understood and enjoyed and its benefits secured for future generations.
HEPS HEP3 and HEP4	*"Plans, programmes, policies and strategies"* devised to manage change should consider the historic environment. Change should be managed to conserve the historic environment, and where detrimental impact is unavoidable it should be minimised.
HEPS HEP5 and HEP6	These policies emphasise the need for working together by giving consideration to communities and individuals in decisions which affect the historic environment.
Highland wide Local Development Plan	
Highland wide LDP, 2012, Policy 57: Natural, Built and Cultural Heritage[18]	The policy states *'All development proposals will be assessed taking into account the level of importance and type of heritage features, the form and scale of the development, and any impact on the feature and its setting, in the*

[18] Highland Council, 2012. *Highland-wide Local Development Plan*

Policy reference	Policy issue
	context of the policy framework detailed in Appendix 2. The following criteria will also apply: *1. For features of local/regional importance we will allow developments if it can be satisfactorily demonstrated that they will not have an unacceptable impact on the natural environment, amenity and heritage resource.* *2. For features of national importance we will allow developments that can be shown not to compromise the natural environment, amenity and heritage resource. Where there may be any significant adverse effects, these must be clearly outweighed by social or economic benefits of national importance. It must also be shown that the development will support communities in fragile areas who are having difficulties in keeping their population and services.*

Legislation

7.2.4 The following legislation is relevant to the assessment of the effects on historic environment receptors:

- Historic Buildings and Ancient Monuments Act 1953;
- Ancient Monuments and Archaeological Areas Act 1979;
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997;
- Environmental Assessment (Scotland) Act 2005;
- Historic Environment (Amendment) (Scotland) Act 2011; and
- Historic Environment Scotland Act 2014.

Technical guidance

7.2.5 The following technical guidance produced by HES and the Chartered Institute for Archaeologists (CIfA) is relevant to the assessment of the effects on historic environment receptors:

- Designation Policy and Selection Guidance[19];
- Managing Change in the Historic Environment – Setting[20];
- Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment[21]; and
- Standard and guidance for historic environment desk-based assessment[22].

[19] Historic Environment Scotland, 2019 Designation Policy and Selection Guidance.
[20] Historic Environment Scotland, 2020 Managing Change in the Historic Environment – Setting.
[21] Chartered Institute for Archaeologists, 2014 Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment.
[22] Chartered Institute for Archaeologists, 2017 Standard and guidance for historic environment desk-based assessment.

7.3 Baseline Conditions

Data gathering methodology

7.3.1 The EIA Scoping exercise has been undertaken with reference to **Chapter 2: Project Description**, supported by a number of data sources. The principal data sources used to inform this chapter for potential effects comprise the following:

- Designated historic environment spatial data and Historic Landuse Assessment (HLA) mapping from HES;
- Non-designated historic environment spatial data, from HC; viewed online at the HES Pastmap[23]; and
- Historic mapping from National Library of Scotland (NLS).

Current baseline

7.3.2 The Proposed Development is located within an area of upland blanket mire, with areas that support acid grassland and semi-improved grasslands. Hill sheep graze the moorland year-round with beef cattle on the lower slopes, with the operational Edinbane being the other main land use within the proposed Development Site. Commercial plantation forestry is also present.

7.3.3 Within the Proposed Development area and the wider Development Site, there are no designated heritage assets. The information for non-designated assets available through Pastmap does illustrate the presence of numerous non-designated heritage features including sheiling huts, townships and cultivation remains.

7.3.4 A number of designated assets that may be subject to indirect effects are present within the ZTV of the initial turbine layout.

Future baseline

7.3.5 With the exception of the decommissioning of the operational Edinbane Wind Farm towards the end of the decade, no changes are anticipated in the baseline condition prior to the Proposed Development being constructed and operated. The Development Site will continue to be managed as planted woodland and rough grazing.

7.4 Consultation

7.4.1 It is anticipated that consultation with HES and HC will be undertaken during the EIA (for example to agree upon the finalised selection of heritage assets for further assessment).

7.5 Scope of Assessment

Study area

7.5.1 The study area for the Historic Environment chapter covers a buffer distance of 500m from the Development Site boundary to assess the potential for designated and non-designated heritage assets which may be subject to direct disturbance or through effects such as dewatering. An extended study area of 15km from the Development Site

[23] https://www.pastmap.org.uk/, last accessed 18/03/2020

boundary would be used to identify designated and nationally important heritage assets which may be subject to indirect effects.

7.5.2 Data on the historic environment would be obtained from:

- Highland Historic Environment Record (HHER), accessed via HC;
- Historic Environment Scotland spatial datasets of designated heritage assets and historic land-use assessment (HLA);
- Archaeological information retained in the National Monuments Record of Scotland (NMRS);
- Historic mapping in the National Library of Scotland and National Archives of Scotland; and
- Other readily accessible sources of archival or cartographic information.

7.5.3 As any change to the setting of historic assets is predominantly related to the visibility to or from it, the full scope of this element of the assessment would be determined with reference to the finalised ZTV for the Proposed Development. This scope would also inform whether any further photomontage or wireframe visualisation not already incorporated into the LVIA assessment will be required to support the assessment of historic assets.

7.5.4 An assessment of how views of the Proposed Development may affect the understanding and experience of heritage assets will be undertaken. Where views of, or from, these assets towards the Development Site could contribute to their setting, these would be assessed further and visited where possible.

7.5.5 Any previously recorded heritage assets within the HER, or previously unknown non-designated heritage assets identified through assessment that would be susceptible to disturbance as a result of the construction of the Proposed Development would be included within the assessment.

7.5.6 The temporal scope of the Historic Environment assessment will cover the construction and operational periods. As effects on the Historic Environment resulting from decommissioning will be no worse than those during construction, and in many case the magnitude of change will be reduced due to underground elements remaining in situ and a shorter programme of works for example, the consequences of this phase of the Proposed Development will be assumed to be similar to that of the construction period.

Potential receptors

7.5.7 It is anticipated that designated historic environment receptors that will require detailed assessment of effects arising through change to setting will include:

- Dun Arkaig, broch, (SM13662);
- Dun Cruinn, fort, Kensaleyre (SM910);
- Kensaleyre Church, cairns and standing stones 1200m SSE of (SM3417);
- Ardmore, chapel and burial ground 230m SW of (SM3884);
- Dun Neill, dun 420m SW of Ardmore (SM3885);
- St Mary's Church and Burial Ground, Dunvegan (SM9249);
- Dun Garsin broch (SM912);

- Dun Flashader, broch (SM911);
- Dun Osdale, broch 850m N of Osdale (SM3493);
- Dun Suladale, broch (SM921);
- Dun Cruinn, fort (SM910);
- Romesdal Bridge, cairn (SM3512);
- Eyre Manse, two cairns (SM3507);
- Dun Borve, fort (SM908);
- Ullinish, fort (SM930);
- Ullinish Lodge, chambered cairn (SM903);
- Dun Feorlig, broch 230m NNE of Feorlig Farm (SM3494);
- Abhainn Bhaile Mheadhonaich, broch and standing stone 145m SE of An Cairidh (SM13664);
- Barpannan, two chambered cairns (SM893); and
- Assets of national significance requested for further assessment by stakeholders.

7.5.8 Heritage assets have been scoped out of the assessment where:

- The Proposed Development would not be visible in views of or from the asset through screening from terrain, nearby buildings or established woodland (but excluding commercial forestry);
- where the setting of the asset is not sensitive to the perceptual change anticipated at the predicted separation from the Proposed Development.

7.5.9 This exercise has been informed by use of the predicted bare-earth ZTV, reference to the HES spatial datasets and asset descriptions in Pastmap and Canmore, mapping and aerial photography.

Likely significant effects

7.5.10 The likely significant effects that will be taken forward for assessment in the EIA Report are summarised in **Table 7.2**.

Table 7.2 Likely significant historic environment effects

Stage of development	Potential effects arising through disturbance	Potential effects arising through change to setting
Construction	Disturbance of archaeological remains within the Development Site whether directly or indirectly through the construction of access tracks, turbines, movement of plant and associated infrastructure or borrow pits.	Visual and audible disturbance of nearby heritage assets through plant movement and construction operations
Operation	None	The Proposed Development would be a perceptual element in

Stage of development	Potential effects arising through disturbance	Potential effects arising through change to setting
		views from and to nearby heritage assets.
Decommissioning	None	Visual and audible disturbance of nearby heritage assets through plant movement and decommissioning operations.

7.6 Assessment Methodology

7.6.1 The proposed generic project-wide approach to the assessment methodology is set out in **Chapter 4**, and specifically in **Section 4.3**. However, whilst this will inform the approach that will be taken, it is necessary to set out how this methodology will be applied, and adapted as appropriate, to address the specific needs of the Historic Environment assessment.

General approach

7.6.2 Aspects of the Historic Environment that are considered by this assessment consist of designated and non-designated heritage assets within and near the Site, as well as designated heritage assets within the wider landscape. Non-designated heritage assets can include artefacts find locations, sites of archaeological interest or surviving structures and manmade features within the landscape that are of historic interest but are not statutorily protected. Designated heritage assets are statutorily protected and include listed buildings, scheduled monuments, inventory gardens and designed landscapes and conservation areas.

Determination of significance

7.6.3 **Table 7.3** details the basis for assessing receptor importance. The rationale is predominantly based on information provided within SPP and HEPS. Note that categorisation of those assets which are of less than national importance generally relies on professional judgement.

Table 7.3 Establishing the importance of receptors

Importance	Receptor type	Sensitivity
High	Designated heritage assets including Scheduled Monuments, Category A listed buildings, Inventory Battlefields and Designed Landscapes.	These assets are considered highly sensitive due to their national importance, and it is possible that low-moderate magnitude of change upon these assets or their settings could lead to significant effects.
Medium	Category B and C Listed Buildings, Conservation Areas, parks and historic landscapes recognised by local and regional designations and non-designated	These assets are best seen as of regional, or more than local importance and their sensitivity will largely depend upon their current setting and their

Importance	Receptor type	Sensitivity
	sites and monuments of regional importance	character. It is possible that moderate-high magnitude of change upon these assets or their settings could lead to significant effects.
Low	Non-designated assets of local importance.	These include assets of local interest, some of which no longer survive and may have limited potential for survival of archaeological material. Although these assets must be considered and mitigation may be required, significant effects are only likely if the assets were to be predominantly or totally destroyed as a result of the Proposed Works.
Negligible	Historic features of note but which cannot be considered heritage assets in their own right.	Due to its nature of form / condition / survival, the feature cannot be considered an asset in its own right, but may inform the EIA or suggest the potential for further remains (e.g. non-extant HER record, chance find, record of recorded feature that cannot be located).

7.6.4 Magnitude of change is a measure of the extent to which an asset would be disturbed or lost. The significance of an effect resulting from a proposed development during construction or operation is most commonly assessed by reference to the sensitivity (or value) of a receptor and the magnitude of change upon the asset and its setting. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the proposed development.

7.6.5 In respect of buried archaeological deposits, where no remains are visible above ground, changes would arise from direct disturbance or removal of archaeological material. Direct loss, damage or alteration of a structure would not only affect architectural value, but could also result in the loss of elements valued for their archaeological potential or historic associations.

7.6.6 The setting of any particular asset is unique and may comprise both tangible and intangible aspects of the assets' context which contribute to how they may be understood, appreciated and experienced. The effects resulting from a change in the setting of a heritage asset depends on the contribution of that setting to the significance of the asset, and assessments must be, by their nature, specific to the individual assets being considered.

7.6.7 The magnitude of change (or impact) is based on the extent to which an asset is affected, which can be influenced by a number of factors:

- the duration of the impact (temporary, permanent or reversible);
- the extent of the change (both positive and negative); and

- the extent or aspect of the heritage asset or its setting that would be affected (for example, the whole or a very small part) and the contribution of that part to the historic value of the asset.

7.6.8 **Table 7.4** details the basis for assessing magnitude of change.

Table 7.4 Establishing the magnitude of change

Magnitude	Criteria (Adverse)	Criteria (Beneficial)
High	Total or substantial demolition / disturbance of a heritage asset, or disassociation of an asset from its setting.	Sympathetic restoration of an at-risk or otherwise degraded heritage asset and/or its setting. Bringing an at-risk heritage asset into sustainable use, with robust long-term management secured.
Medium	Partial disturbance or inappropriate alteration of a heritage asset. Change to the key characteristics of a heritage asset's setting, which affects the importance of the asset, but which still allows its cultural significance to be appreciated.	Appropriate stabilisation and/or enhancement of a heritage asset and/or its setting that better reveal the significance of the asset or contribute to a long-term sustainable use or management regime.
Low	Minor loss to or alteration of an asset which leave its current importance largely intact. Minor and short-term changes to setting which do not affect the key characteristics and in which the historical context remains substantially intact.	Minor enhancements to a heritage asset and/or its setting that better reveal its significance or contribute to sustainable use and management.
Negligible	Minor alteration of an asset which does not discernibly affect its importance. Minor and short term or reversible change to setting which do not affect the asset.	Minor alteration of an asset which does not affect its significance in any discernible way. Minor and/or short-term or reversible change to setting which does not affect the significance of the asset.

Limitations

7.6.9 Some assets earmarked for detailed assessment may not be safely accessible for site visits owing to land access restrictions through private ownership or other safety concerns. Where applicable, these restrictions will be noted in the EIA Report chapter text and where relevant visualisations will be sought to compensate for this.

8. Ornithology

8.1 Introduction

8.1.1 The Ornithology chapter of the EIA Report will set out the desk study and survey work undertaken to define the baseline of the Proposed Development and the surrounding area. The results of this work will be summarised (with details presented in baseline reports appended to the EIA Report) and will provide the basis for the determination of potential effects on any ornithological features that are considered to be important.

8.2 Baseline Conditions

Data Sources

Desk Study

8.2.1 The following data sources will be consulted as part of the desk-study undertaken to inform the assessment:

- NatureScot SiteLink Information Service (https://sitelink.nature.scot) for designated sites;
- Data requests from the Highland Raptor Study Group (HRSG) and Forestry and Land Scotland (FLS), which should include provision of historic Schedule 1 raptor / owl nest site and roost site locations within 2 km of the Site (6 km for eagle species); and
- Any other relevant Environmental Statements/EIA Reports or technical reports from other developments or proposed developments in the local area.

Field Surveys

8.2.2 NatureScot (2017) guidance recommends a default baseline survey programme of two years to ensure any interannual variation is recorded to allow for a robust assessment of effects on ornithology.

8.2.3 Based on initial scoping of the proposed wind farm site (the 'Site') and surrounding area, it is likely that it supports protected and/or notable species including breeding Schedule 1 species such as golden eagle, white-tailed eagle, hen harrier, merlin and greenshank. The Site may also support EU Birds Directive Annex I species (e.g. dunlin, golden plover and short-eared owl). Surveys will therefore be aimed at detecting such species (referred to as 'target species') and will follow the methodologies detailed in the guidance below:

- *Recommended bird survey methods to inform impact assessment of onshore wind farms* (NatureScot 2017);
- *Bird Monitoring Methods* (Gilbert *et al.*, 1998)[24]; and
- *Raptors: a field guide for surveys and monitoring* (Hardey *et al.*, 2013)[25];

[24] Gilbert, G., Gibbons, D. W. and Evans, J. (1998). *Bird Monitoring Methods*. RSPB, Sandy.
[25] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013). *Raptors: a field guide for surveys and monitoring*. Third Edition. The Stationery Office, Edinburgh.

8.2.4 The following surveys will be completed between September 2022 and August 2023, following relevant guidance outlined above:

- Flight activity surveys from three Vantage Point (VP) locations – September 2022 to August 2023 (see **Figure 8.1 – VP Viewsheds**);
- Eagle roost surveys of the Site and a 2 km buffer (where access available) – October 2022 to January 2023;
- Breeding eagle surveys of the Site and 6 km buffer (where access available) – February to July 2023;
- Moorland bird surveys (MBS) of the Site and a 500 m buffer (where access available) – April to July 2023; and
- Breeding raptor surveys of the Site and a 2 km buffer (where access available) – April to August 2023.

8.2.5 The results of a first year of bird surveys will be assessed in August 2023 to determine whether a second year of bird survey is appropriate. NatureScot and RSPB will be consulted again at this time.

Current Baseline

Designated Sites

8.2.6 Designated sites within the vicinity of Edinbane include the Cuillin Special Protection Area (SPA), which is situated approximately 13 km to the south and is designated for its golden eagle population. There are no other internationally designated sites (SPAs or Ramsar sites) within 20 km of the Proposed Development nor any Sites of Special Scientific Interest (SSSI) within 10 km citing bird interests.

8.2.7 **Table 8.1** details the Qualifying Feature(s) of the Cuillins SPA.

Table 8.1 Qualifying Features of the Cuillins SPA

Feature	Condition	Description	NatureScot (2016[26]) foraging range from nest site during breeding season
Golden eagle *Aquila chrysaetos* **Breeding**	Favourable maintained (31 August 2006)	Breeding population of European importance: average of 8 pairs representing 1.9% of the GB population. This population has a high breeding productivity for the west coast of Scotland and is one of the highest density populations in Britain.	Core: 6 km Maximum: 9 km

8.2.8 Supported by NatureScot (2016) guidance on foraging distances, it is considered unlikely that breeding golden eagles from the Cuillins SPA would range as far as the Site.

[26] NatureScot. (2016). *Assessing Connectivity with Special Protection Areas (SPAs)*. Version 3 – June 2016. See: https://www.nature.scot/sites/default/files/2018-08/Assessing%20connectivity%20with%20special%20protection%20areas.pdf accessed on 13 September 2022.

Nonetheless, the population breeding across Skye is likely to be functionally linked and therefore Habitats Regulation Assessment (HRA) Screening is proposed.

Data Requests

8.2.9 Schedule 1 raptor / owl nest / roost site data requested from the HRSG and FLS was provided in September 2022. There are no known golden eagle nest sites within the 6 km search area, though two golden eagle territories overlap the search area.

8.2.10 Three white-tailed eagle nest sites (from two territories) and two white-tailed eagle roost sites were identified within the 6 km search area. Additionally, it was confirmed that hen harrier has also bred within the 2 km search area.

Other Data

8.2.11 A review of available data (covering the period of 2007 to 2022) relating to the operational Edinbane Wind Farm and four adjacent wind farms (including operational schemes as well as those at the pre-application or application stage) has been undertaken and is summarised below:

- **Edinbane Wind Farm (and Ben Aketil Wind Farm)**
  - Post-construction monitoring (PCM) was undertaken at Edinbane / Ben Aketil wind farm sites from 2007-14 (Haworth Conservation Ltd 2015[27]). PCM comprised VP surveys from five locations (the fourth was added in 2008 to target a potential white-tailed eagle roost and the fifth in 2010, to provide better coverage of the Ben Aketil Wind Farm). Surveys for raptors breeding within 2 km of the consented Edinbane Wind Farm and of all golden eagle territories on the Isle of Skye were undertaken each year between 2007 and 2014.
  - Golden eagle flight activity fluctuated between years and varied over different areas of the Site. At Edinbane Wind Farm, construction activity spanned 2008-10 and flight activity declined during those years, particularly in 2009 and 2010. There was a recovery thereafter with little difference between the 2007 and 2014 golden eagle data. The findings suggested that construction related displacement was greater than operational displacement.
  - The key activity areas included the ridge to the east of the operational Edinbane Wind Farm and to the north-east; as well as the area to the east and south of Ben Aketil Wind Farm. White-tailed eagle flight activity increased markedly during this period and showed no signs of displacement by either wind farm. The key activity areas were centred around the southern part of the operational Edinbane Wind Farm, as well as ground between the Edinbane and Ben Aketil Wind Farms. Hen harrier flight activity increased from 2007 to 2012. No hen harrier flight activity was recorded in 2013 and only low levels were recorded in 2014.
  - The number of occupied home ranges of golden eagle on the Isle of Skye remained constant between 2007-14 (29-30 home ranges), fledging between eight and 17 chicks each year. White-tailed eagle attempted to nest to the south of Edinbane Wind Farm in 2013 and within a conifer plantation in 2014. Both nesting attempts failed. Between 2007 and 2014, the peak number of hen harrier territories within the North Skye survey area was 13 in 2011 and the lowest was three territories in 2013. A maximum of ten nests was found in any year (2008, 2010 and 2011) and the peak number of young fledged was 15 in 2011. Additionally, a pair bred within

[27] Haworth Conservation Ltd. (2015). *Edinbane Windfarm: Ornithological Monitoring 2007-2014. A review of the spatial use of the area by birds of prey*. January 2015.

800 m of an operational Edinbane Wind Farm turbine in 2011 and within 400 m in 2012.

- **Glen Uillinish II Wind Farm**
  - As outlined within the Scoping Report (Muirhall Energy, 2022[28]), baseline ornithology surveys commenced in March 2021 and spanned two breeding seasons and a single winter season, although results are only available for year one of the survey programme. Surveys for the proposed Glen Uillinish II Wind Farm comprised: VP surveys from 13 locations in year one and ten locations in year two; a four visit MBS; breeding raptor / owl surveys (and roost monitoring surveys); and breeding diver surveys comprising visits to potential breeding lochs.
  - Surveys recorded the following target species: red-throated diver (breeding); white-tailed eagle, golden eagle, hen harrier and merlin; short-eared owl (breeding); curlew and greenshank (both breeding). In addition, goshawk and great skua (both non-breeding) were recorded; flights by migratory/wintering Greenland white-fronted goose and whooper swan were also recorded; and golden plover were recorded in the winter. Pink-footed goose, common sandpiper, snipe, redshank and oystercatcher were recorded utilising fields within the survey area.
- **Ben Aketil Wind Farm Extension**
  - As documented within the Scoping Report (Falck Renewables, 2022[29]), a range of surveys were carried out over two breeding seasons and one non-breeding season from March 2021 to August 2022, comprising VP surveys (a total of 72 hours from two VP locations each season), MBS and raptor/owl surveys. Results from Year 1 of the bird survey programme were summarised within the Scoping Report.
  - VP surveys in Year 1 recorded flights of nine target species, with over five flights of the following species noted: golden eagle (14 flights), white-tailed eagle (25 flights) and hen harrier (6 flights).
  - The MBS in 2021 recorded snipe, golden plover, common sandpiper, oystercatcher, eider and ringed plover breeding within the survey area.
  - The raptor/owl surveys recorded a single hen harrier nest, 6 km to the north-west of the Ben Aketil Wind Farm Extension in 2021. Activity of golden eagle, white-tailed eagle and merlin was also recorded within the survey area in 2021, however no active nests were found.
- **Ben Sca Wind Farm / Extension (text taken from NTS[30])**
  - VP, wader, raptor and diver surveys were undertaken in 2018/2019 to inform the EIA for the consented seven turbine Ben Sca Wind Farm. A shortened programme of additional VPs, wader and raptor surveys for the Ben Sca Wind Farm Extension were undertaken between January and May 2021.
  - The key receptors recorded during the VP surveys were white tailed eagle, hen harrier, golden eagle and golden plover. Hen harriers were observed between 2018 and 2021 in the vicinity of the proposed development although no further information on breeding is presented within the NTS.
- **Balmeanach Wind Farm Extension**

[28] Muirhall Energy. (2022). *EIA Scoping Report: Glen Uillinish II Wind Farm*. March 2022.
[29] Falck Renewables. (2022). *The Repowered and Extended Ben Aketil Wind Farm: Scoping Report*. July 2022.
[30] https://benscawindfarm.co.uk/wp-content/uploads/2021/12/BSEx-Vol-1-NTS-Final-Submission.pdf

- As documented within the Scoping Report (SLR, 2022[31]), NatureScot were consulted with respect to the duration of ornithological surveys, and it was agreed that a single year of survey is appropriate at Balmeanach. Bird surveys were undertaken between February 2020 and March 2021 and comprised VP surveys from two locations (totalling 115 hours at VP1 and 111 hours at VP2); a four-visit MBS between April and July 2020; a four-visit raptor survey between April and July 2020; and a three-visit diver survey between April and July 2020. Additional VP surveys focussed on eagle activity were carried out between October 2021 and September 2022.
- The scoping report notes "*Flight activity at the Balmeanach Site was dominated by transitory white-tailed and golden eagles, with most of these flights associated with the areas of higher ground to the edge of the Site and outside the Site boundary i.e. away for the proposed turbine locations. There were a few occasional flights by other raptors i.e. hen harrier and merlin. White-tailed eagle flights were assessed as being commuting flights associated with a nearby breeding territory. Golden eagle flights were most likely to be commuting flights by non-territorial sub-adult birds"*. Additionally, golden plover and red-throated diver flights were also recorded during the VP surveys.
- The Scoping Report presents minimal information on the results of the distribution and abundance surveys, although a single white-tailed eagle breeding territory was noted ~2 km to the south of the Balmeanach Wind Farm Extension site.

Field Surveys

8.2.12 Existing baseline data will be supplemented with a programme of bird surveys noted in paragraph 8.2.3. Surveys commenced in late September 2022.

8.3 Future Baseline

8.3.1 The Site is primarily managed for sheep/cattle grazing and commercial forestry plantation and it is expected that land use management would not dramatically change in the absence of the Proposed Development. The only exception (with or without the Proposed Development) is the decommissioning of the existing Edinbane Wind Farm.

8.4 Initial consultation

8.4.1 A letter outlining the proposed baseline ornithology survey methods in support of the EIA for the replacement of the currently operational Edinbane Wind Farm was issued to NatureScot and RSPB on 05 August 2022 (see **Appendix C**). Feedback on the approach to the surveys planned to be undertaken to inform the EIA of the Proposed Development were sought from both consultees.

8.4.2 **Table 8.2** responds to comments on the proposed baseline ornithology survey methods received from NatureScot (Alex Turner) on 07 August 2022 and RSPB (Bea Ayling) on 17 August 2022.

[31] SLR. (2022). Balmeanach Wind Farm Limited. Environmental Impact Assessment Scoping Report. Proposed Balmeanach Wind Farm. August 2022.

Table 8.2 Early-stage consultee comments and resultant actions

Consultee	Comment	Action
NatureScot	Please refer to our general pre-application advice which has recently been updated and now includes a section on repowering and birds: https://www.nature.scot/doc/general-pre-application-and-scoping-advice-onshore-wind-farms. Given that this proposal extends beyond the footprint of the existing windfarm (taken to be the area close to existing turbines, tracks and infrastructure) then 2 years of full bird survey work is likely to be required in those extension areas, unless you have existing data of an acceptable age that covers the same ground.	Noted. It is understood that there has been some survey work undertaken at the site in the form of post-construction monitoring since surveys in support of the operational scheme in 2001/02. The results of a first year of bird surveys will be assessed in August 2023 to determine whether a second year of bird survey is appropriate. NatureScot will be consulted again at this time.
NatureScot	As our guidance suggests, we recommend that you consider the original Edinbane VP data as part of your desk study. Reviewing the displacement/avoidance recorded in the Edinbane and Ben Aketil PCM, combined with more recent research, could inform the proportion of the ground where a standard assessment could be used versus areas where a more qualitative assessment is appropriate. The complicating factor in re-considering the original data will be the major increase in white-tailed eagle population on Skye over the intervening years, including new breeding pairs in this part of Skye. Different approaches may be required for different species.	All available data collected in support of the original planning application and also the PCM undertaken as part of the Edinbane and Ben Aketil Wind Farms will be reviewed within the desk study. This data will be used to assess where a standard assessment or qualitative assessment is undertaken. It is noted that the species-assemblage may have changed in the intervening period and that certain receptors are now be present that may not have been at the time of the original impact assessment (e.g. white-tailed eagle).
NatureScot	We agree with your summary of the designated sites and notable species.	Noted.
NatureScot	We can't comment on the proposed VPs in the absence of viewsheds. In addition to the points you've highlighted we recommend that VP locations should be informed by the desk study and our standard guidance. You haven't said why you propose additional VP effort in the spring/summer: golden eagle and white-tailed eagle are likely to be the key species and will be present year-round. Clearly though, we welcome any additional watches beyond the minimum requirement.	VP locations have been ground-truthed on the initial site visit. VP viewsheds are presented in **Figure 8.1 – VP Viewsheds**. WSP understands that the key species are likely to be golden and white-tailed eagles. It is highlighted within NatureScot (2017) guidance that a minimum of 72 hours of observation should be undertaken across the year for these species and WSP has proposed that 84 hours of survey effort is undertaken.

Consultee	Comment	Action
		Additional VP effort is scheduled for the breeding season for species such as golden plover, short-eared owl, hen harrier and merlin as per NatureScot (2017) guidance.
NatureScot	You also don't explain why 'Access is unavailable outwith the Site'. We are not aware of any land management activity which would restrict such surveys. We would expect our standard guidance to be followed. We are doubtful that RSG will have the required detail for this area. As per our guidance, cooperation/collaboration with other developers/surveyors is recommended.	The client has informed WSP that land outside the Site boundary is not accessible for bird surveys. WSP will endeavour survey in these areas from the Site Boundary and publicly accessible locations and will obtain data from other neighbouring developers where possible.
NatureScot	We agree that diver and wintering waterbird surveys are unlikely to be necessary: they have not been a key species in earlier developments. As above, we would expect indications of raptor roosts on adjacent land to be followed up.	Noted that diver and wintering waterbird surveys are unlikely to be necessary. All raptor roosts on adjacent land, including those identified from the data search, will be followed up where access is available.
NatureScot	The standard assessment process you have identified may not be appropriate for the existing windfarm area. Please review the above guidance and include updated proposals with scoping.	Comments relating to potential deviation from a 'standard' assessment process for the existing wind farm area noted. All available assessment guidance and the process relating specifically to the existing windfarm area will be reviewed in light of the results of the ongoing surveys. Where there is a requirement for deviation from the standard assessment process, the rationale for the alternative approach will be set out in the EIA Report chapter. Any alternative approach will be communicated to NatureScot/RSPB following completion of year 1 surveys and initial assessment.
NatureScot	We now recommend the use of GET modelling in most cases (see https://www.nature.scot/doc/naturescot-statement-modelling-support-assessment-forestry-and-wind-farm-impacts-golden-eagles). Please check whether PAT modelling was used in the original ES.	Noted. GET modelling will be commissioned as part of the assessment process. PAT modelling was not used in the original ES.
NatureScot	My other comments are around the history of the existing site. My recollection (and you should check) is that the main ridge (Beinn a Chearcaill to Cruachan Ben VicAskill) was kept free of turbines because of it had significantly higher usage by eagles. It also comes out as high usage in the GET modelling. Also, a turbine was originally proposed at new T10 location, but this was removed for landscape and deep peat reasons which is unlikely to have changed.	Noted. All potential constraints will inform any design process.

Consultee	Comment	Action
NatureScot	As always, we would encourage formal pre-app and/or scoping at an early stage. There is a good chance in this case that cumulative landscape and peat depths will influence turbine locations just as much as birds. The relevant consenting authority may also take a different view to us on what constitutes repowering versus extension.	Noted. We intend to undertake consultation throughout the EIA process.
RSPB	Surveys over a single calendar year between September 2022 to August 2023 are to be undertaken (although the final decision on this will be made when the first year of results are available). The Scoping Report should justify this as NatureScot's advice on repowering projects as outlined here, states that "If the proposal includes an extension beyond the footprint of the existing wind farm, then two years of full bird survey work is likely to be required in those areas, following the standard approach for any wind farm extension." **Figure 1.2** (Site Layout) shows that most proposed new turbines are in different locations to existing ones, and therefore we would strongly suggest two years of survey as this would expand the development footprint and area significantly, along with use of larger turbines.	Noted. The results of a first year of bird surveys will be assessed in August 2023 to determine whether a second year of bird survey is appropriate. RSPB will be provided with bird survey results for subsequent discussion.
RSPB	NatureScot's recommended bird survey guidance should be used to inform the methodology for any bird surveys.	Noted.
RSPB	**Vantage Point (VP) surveys** It is not appropriate to undertake collision risk calculations from vantage point observations when there are already turbines present in the viewsheds and therefore vantage point surveys covering the existing turbine area would only be useful to gain a general understanding of flight activity. NatureScot advises using the original vantage point data overlaid on the new turbine locations to calculate collision risk. However, it would be advisable for VPs to cover any extended areas into new ground to provide a collision risk in any new turbine areas. All new proposed turbine areas plus a 500 m buffer should be covered by viewsheds from the vantage points. The Highland Raptor Study Group (HRSG) and Forestry and Land Scotland (FLS) should be consulted for nest and roost data for the site and 6 km buffer	VP viewsheds cover both the existing wind farm and areas beyond this where turbines may be located. We note the comments relating to CRA for the existing wind farm area and the original VP data will be sought. Noted. VP locations have been ground-truthed on the initial site visit. VP viewsheds are presented in **Figure 8.1** – VP Viewsheds. Nest and roost data for the Site and 6 km buffer have been provided by the HRSG and FLS.

Consultee	Comment	Action
	before vantage points are chosen to ensure they are not located close to any known sensitive sites which could affect behaviours/flights being recorded. NatureScot guidance states that “Care also needs to be taken not to locate observation points in locations that may lie directly between the site and a roost or nest site of a key target species, as this can seriously influence the behaviour of birds to be surveyed.” We note no access has been permitted outside the Site boundary and the grid references for VPs overlap with or are in close proximity to proposed turbines. Again, there is a risk that flights/behaviours could be influenced. NatureScot guidance recommends that “Where VPs are located within the survey area, they should not be used simultaneously with other VP locations which overlook them as the presence of an observer either sitting at or moving to/from the VP will probably affect bird behaviour.” We would therefore support the use of hides at all VP locations.	VP surveys would be not undertaken simultaneously from different locations (and hides will be used where appropriate).
RSPB	**Raptor surveys**	
	We understand that raptor surveys can only be undertaken within the Site boundary due to access issues. We therefore support the aim to request historic data from HRSG. We would also recommend requesting data from neighbouring landowners such as FLS, and neighbouring wind farm developers at Ben Sca, Ben Aketil and Glen Ullinish. The breeding season for golden and white-tailed eagles begins in February, see here. Therefore, surveys for these two species will need to start much earlier than for other raptors. Roost surveys should also be undertaken in the non-breeding seasons for white-tailed eagle and hen harrier. We note that this is not considered necessary by the Applicant but given the area’s importance for these species, knowledge of any roosts within 2 km will be essential in order to fully assess impacts.	Historic data has been requested from the HRSG and FLS. Additional breeding eagle surveys will commence in February 2023 and data will be sought from the HRSG will inform any assessment on eagles outwith the Site boundary. Additional eagle roost surveys will commence in late October 2022 and will focus on known roost sites provided by FLS and the HRSG. Any additional roosting behaviour identified from the VP watches will be followed up accordingly.
RSPB	**Cumulative assessment**	

Consultee	Comment	Action
	We note that a cumulative assessment focused solely on wind farms would be carried out. We are concerned about the number of operational, consented and in-planning wind farms and overhead powerlines in this area of central Skye, as it is a particularly important area for immature eagles of both species. The wider availability of non-territorial space for these birds is diminishing due to such developments and we understand that NatureScot has previously expressed similar concerns during the Ben Aketil planning process. Therefore, the cumulative and in combination assessment should take account of all existing and proposed wind energy schemes that could impact on the NHZ6 and SPA bird populations in question. The in-combination effect of other relevant plans or projects such as overhead power lines and new woodland planting, forestry felling, and the Skye Reinforcement Project should also be considered as per NatureScot guidance on cumulative impact assessment on birds.	Noted. The cumulative assessment will include all developments with potential impacts on key receptors.
RSPB	**Golden eagle models**	
	We support producing a Golden Eagle Terrain (GET) model, however this should not take precedence over observational data, particularly of breeding birds as the GET model is used to predict landscape use by dispersing and non-breeding golden eagles. However, we recommend that this can be useful in informing turbine layout to avoid the most suitable terrain for golden eagle.	The production of any GET model would be used in conjunction with observational data collected from VP surveys.
	However, no such models exist for white-tailed eagles, and we are aware that this species is susceptible to collision with turbines. We are aware of at least three collision incidents in Scotland of white-tailed eagles that have had injuries believed to be from turbine blades, one of which was at the operational Edinbane wind farm. A robust assessment of impacts on this species is therefore required.	Noted. Any impacts on white-tailed eagle will be assessed from survey data and also data collected as part of the desk study process (e.g. from the RSG).

8.5 Scope of Assessment

8.5.1 The assessment reported in the EIA Report will be defined by the outcome of the on-going bird surveys that will continue as the EIA progresses. However, based on an initial desk study appraisal and professional judgment, the following features are likely to be taken forward for detailed assessment: golden eagle; white tailed eagle; other raptors and breeding waders. Should any additional sensitive receptors be identified during the course of surveys and consultation, these will be included within the assessment as appropriate.

8.5.2 Potential disturbance/displacement during all phases on the Proposed Development will be considered, as will collision risk during the operational phase.

8.5.3 The assessment would be undertaken in accordance with best practice guidance including the following:

- Chartered Institute of Ecology and Environmental Management. (2022). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine;
- The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations);
- The Wildlife & Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act (2004);
- The Wildlife and Natural Environment (Scotland) Act 2011;
- Recommended bird survey methods to inform impact assessment of onshore wind farms (NatureScot 2017);
- Assessing significance of impacts from onshore wind farms outwith designated areas (NatureScot 2018a);
- Avoidance Rates for the onshore SNH Wind Farm Collision Risk Model (NatureScot 2018b); and
- Assessing the cumulative impacts of onshore wind farms on birds (NatureScot 2018).

8.5.4 The ornithology EIAR chapter would also contain:

- Collision Risk Analyses (CRA) based NatureScot guidance (2017) where required;
- Cumulative assessment would be carried out in accordance with recent guidance, which states that such assessments are required at the Natural Heritage Zone (NHZ) scale (with Edinbane included in the Western Seaboard NHZ) (Wilson et al., 2015); and
- Golden Eagle Territory (GET) modelling to predict any potential range loss for golden eagle as part of the impact assessment. National and local planning policies, best practice guidance, the outcome of consultation and any mitigation identified will be considered in the ornithological impact assessment.

8.5.5 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: EIA Process and Consultation**. This section describes how this methodology will be applied, and adapted as appropriate, in order to correspond with topic specific guidance.

8.5.6 An Ornithology EIA Report chapter will summarise the findings of the desk study, surveys and consultation. This will form the baseline against which the potential impacts of the Proposed Development, alone and cumulatively with other wind farm developments, would be assessed, based on the nature and magnitude of the changes as a result of the Proposed Development and the importance of the ornithological features. Any mitigation considered necessary will be identified and residual effects with this in place will be determined.

8.5.7 It is important to note that the assessment would not only consider the overarching nature conservation importance of a species recorded, but also take into consideration the importance of the Site for that species, as judged on the basis of the habitats present and the level of use. To illustrate the rationale of this approach, the value of a site where a single individual of high nature conservation importance was rarely recorded will be extremely limited.

8.5.8 Adverse effects will be assessed as being significant if the favourable conservation status of an ornithological feature would be lost as a result of the Proposed Development. Beneficial effects will be assessed as those where a resulting change from baseline improves the quality of the environment (e.g. increases species diversity, increases the extent of a particular habitat etc., or halts or slows down an existing decline).

8.5.9 The decision as to whether the conservation status of an ornithological feature would be affected will be made using professional judgement, drawing upon the information produced through the desk study, field survey and assessment of how each feature is likely to be affected by the Proposed Development. A similar procedure will be used where designated sites may be affected by the Proposed Development, except that the focus will be on the effects on the integrity of each site.

8.5.10 In line with the EIA Regulations 2017, the ornithological impact assessment will only consider those effects that are likely to be significant.

9. Ecology

9.1 Introduction

9.1.1 The terrestrial ecology and ornithology assessment will consider the potentially significant effects[32] on terrestrial and freshwater habitats and legally protected and notable species that may arise from the construction, operation and decommissioning of the Proposed Development. This Section of the Scoping Report describes the methodology to be used within the EIA, an overview of the baseline conditions at the Site, the datasets to be used to inform the EIA, and the likely significant effects to be considered within the EIA.

9.2 Baseline Conditions

Data Sources

Desk-study

9.2.1 A desk-based data-gathering exercise will be undertaken to obtain existing information relating to relevant ecological features, these being: statutory and non-statutory biodiversity sites; habitats and species of principal importance; legally protected and controlled species; and other conservation notable species that have been recorded over the previous 10 years. The following data sources will be consulted as part of the desk-study:

- NatureScot SiteLink[33] Information Service for designated sites;
- Ecological data records will be sought from Highland Biological Recording Group (HBRG)[34];
- NatureScot will be contacted for available freshwater pearl mussel (FWPM) records;
- Edinbane Wind Farm Environmental Statement, Chapter 5 Ecology (Amec, 2002[35]); and
- Any other relevant Environmental Statements/EIA reports or technical reports from other developments or proposed developments in the local area, including Ullinish II EIA Report and the 2015 and 2021 Glen Ullinish Wind Farm Surveys; and the Ben Aketil Wind Farm scoping report.

Study Area

9.2.2 The study area for terrestrial ecology comprises the area over which all desk-based and field data will be gathered to inform the terrestrial ecology scoping assessment presented

[32] Other technical chapters use “likely significant effects” and “potential likely significant effects” to accord with the EIA Regulations 2017. Within the terrestrial ecology chapter the term “potentially significant effects” is used as it accords with CIEEM guidance to describe effects that have the potential to be significant prior to their assessment (i.e. until the end of the “scope of the assessment”), and the term “likely significant effects”, only once assessment has determined that they would indeed be significant. This is not to be confused with Likely Significant Effects (LSEs) when used in the context of the Habitats Regulations Assessment.
[33] https://sitelink.nature.scot/home
[34] http://www.hbrg.org.uk
[35] Amec (2002). Edinbane Wind Farm. Environmental Statement. February 2002.

in this section. Due to the presence of multiple ecological features[36] and many potential effects, the level and type of data collection varies across the study area. The 'study area' will comprise:

- all land within the Site boundary;
- Statutory sites designated under International conventions or European legislation; and available bat records - within the Site and a 10 km study area buffer;
- Statutory sites designated under national legislation, locally designated sites, Scottish Biodiversity List (SBL) species, Red-listed species; and legally protected and legally controlled species - within the Site and a 2 km study area buffer.

9.2.3 The extent of the areas of search were determined based on best practice guidance and a high-level overview of the types of ecological features present, and the potential effects that could occur. The study area was defined on a precautionary basis to ensure that the Zones of Influence (ZOI) relevant to all ecological features are covered during baseline data collection activities. ZOIs are the areas within which a potentially significant effect associated with the Project may be identified for a particular ecological feature.

Proposed Field Surveys

9.2.4 Field survey will follow best practice guidance and will comprise the following:

9.2.5 **Extended Phase 1 Habitat Survey** – An extended Phase 1 habitat survey will be completed within the Site boundary following the standard habitat survey method described in the Handbook for *Phase 1 Habitat Survey: a technique for environmental audit*[37] (JNCC, 2010). Habitats within 250 m of the Site boundary will also be mapped where accessible. An extended Phase 1 habitat survey will characterise the habitats present on Site and include an initial assessment of habitat suitability to support protected species, including badger (although presence of this species is not confirmed on Skye), pine marten, red squirrel, herptile species, and a bat roost suitability assessment.

9.2.6 **National Vegetation Classification (NVC) Survey** – NVC surveys will be undertaken between April and August where the presence of Annex 1 habitat types, Scottish Biodiversity List (SBL)/UKBAP[38] priority habitats, or potential Groundwater Dependent terrestrial Ecosystems (GWDTEs) have been identified, following completion of desk study and Extended Phase 1 Habitat survey. Surveys will be undertaken within 250m of proposed works areas.

9.2.7 Surveys would also provide a detailed description of current vegetation condition, and any continuous blanket bog units over 25ha in extent would be mapped. Within these areas, the frequency of drains/peat cutting/areas of bare peat, the presence of plant species indicating peat formation capabilities or a lack of disturbance, any nationally rare or scarce species, any areas of natural surface patterning and the presence of any woodland/scrub will also be mapped and described.

9.2.8 **Aquatic Mammal Survey** – Otter and water vole surveys will be undertaken along all watercourses and water bodies within the Site boundary (and up to a maximum of 250 m

[36] Ecological feature' is used within Ecological Impact Assessment (EcIA) published by the Chartered Institute of Ecology and Environmental Management (2018) in place of the term 'terrestrial ecology receptor'. The term ecological feature is used throughout this chapter.
[37] JNCC (2010). *Handbook for Phase 1 Habitat Survey: a technique for environmental audit.*
[38] United Kingdom Biodiversity Action Plan - https://jncc.gov.uk/our-work/uk-bap-priority-species/

outwith this area where accessible). The surveys will be carried out in accordance with standard methodologies (e.g. Chanin, 2003[39]; and Dean *et al*. 2016[40]).

9.2.9 **Fish Habitat Survey** – The Site lies on the water shed between the upper tributaries of the River Ose and the upper reaches of the Abhainn Choishleadar; these river catchments are not considered of high sensitivity at the regional level for wild fish stocks (via direct acute pollution or siltation). The River Ose and the Abhainn Choishleadar are expected to support brown trout and they may hold small populations of migratory salmonids.

9.2.10 Requirements for fisheries and freshwater invertebrates surveys will be scoped by a Scottish Fisheries Co-Ordination Centre (SFCC) accredited surveyor in order to identify the suitability of watercourses within the Study Area to support potential fisheries interest/risks (e.g. including salmon, lamprey, trout, fresh water pearl mussel etc.). FWPM have been recorded in three rivers on Skye, therefore the suitability of watercourses for this species will be undertaken in line with NatureScot guidance[41]. Given the low likelihood of presence of FWPM and taking account of proposed embedded mitigation to protect water courses, we propose to carry out surveys alongside the freshwater mammal surveys (unless evidence of presence was obtained). Survey scope will be determined following further desk study, field survey and consultation as necessary.

9.2.11 **Bat Surveys** – A habitat assessment will be undertaken alongside the Extended Phase 1 Habitat survey walkover to observe, assess and record any habitats suitable for bats to commute and forage. Any areas with high bat potential within 250m of the Site boundary will be investigated to identify potentially important roost sites. If any potential roosts are identified, these may need to be subject to internal roost surveys and/or external emergence surveys. A desk study will also inform the scope of any bat surveys on the Site. Assessments for previously consented wind farms have generally indicated low bat usage; however previous surveys have identified localised areas of higher usage/importance including a Natterer's bat roost and foraging area within the wider vicinity of the Site (adjacent to the Glen Ullinish II site).

9.2.12 Survey effort will therefore adhere to NatureScot (2021) *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*[42]. Any areas with high bat potential within 250 m of the Site boundary will be investigated to identify potentially important roost sites. If any potential roost sites are identified, these may need to be subject to internal roost surveys and/or external emergence surveys. Based on an initial site risk assessment, the scale of the development (and presence of other wind developments within 5km) this is assessed as 'Medium' project size. Whilst there is likely to be limited availability of roost features on or near the Site given the extent of open upland terrain and extent of coniferous plantation; the presence of upper tributaries of the River Ose and the upper reaches of the Abhainn Choishleadar, could provide potentially important foraging and commuting corridor. The Site is therefore assessed at this stage as being of potential Medium risk for bats. On this basis, ground based monitoring using full spectrum static (SM4) bat detectors would be undertaken for 10 consecutive nights during Spring, Summer and Autumn seasons in accordance with stated best practice. Survey efforts will be focused in those parts of the Site where turbines are most likely to be located.

9.2.13 **Wild deer** - The presence of wild deer, including numbers and distribution will be investigated. If there are resident deer populations, the EIAR will include an assessment of the potential impacts of the development on deer welfare, habitats, road safety and other interests. Additionally, the potential for any impact in relation to potential habitat restoration

[39] Chanin, P. (2003). Monitoring the Otter Lutra. Conserving Nature 2000 River Monitoring Series No 10. English Nature: Peterborough
[40] Dean, M., Strachan, R., Gow, D. and Andrews, R., (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds. Fiona Mathews. and Paul Chanin. The Mammal Society, London.
[41] https://www.nature.scot/doc/standing-advice-planning-consultationsfreshwater-pearl-mussels
[42] SNH (2019). Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.

within and around the Site would be considered. Should significant impacts be likely, a deer management statement would be prepared as part of a Habitat Management Plan.

Consultation

9.2.14 It is anticipated that consultation with NatureScot, the Highland Council (HC), Forestry and Land Scotland (FLS) and/or Skye District Salmon Fishery Board will be undertaken during EIA.

Current Baseline

9.2.15 The Site boundary is situated on the western margins of the Beinn a Chearcaill ridge and the summit of Ben Ska at altitudes between 120m and 240m a.o.d. The moorland forms part of two farm holdings 4km south of Edinbane, Isle of Skye. The topography comprises moderate slopes (2 -10°) over the valley sections and steeper slopes of 30- 45° to the east. Geologically the site lies on tertiary igneous deposits overlain by peat that includes smaller glacial deposits.

9.2.16 The Site lies on the water shed between the upper tributaries of the River Ose and the upper reaches of the Abhainn Choishleadar. Some sections of the survey area are known to contain peat hags with bog pools, but otherwise the site lacks any significant standing water. The principal surface cover is blanket mire, with areas that support acid grassland and semi-improved grasslands around the farm at Glen Vic Askill. Hill sheep graze the moorland year-round with beef cattle on the lower slopes north and west of Glen Vic Askill farm. Red and roe deer are present both within the plantation and over the moorland at a moderate density. The hills and slopes to the north, east and south-west of the survey area support commercial conifer plantations and the terrain to the Dunvegan in the west is moorland and sheep walk.

Statutory and Non-Statutory Designated Sites

9.2.17 A single site designated for its nature conservation interest lies within 10km of the Proposed Development[43]: Inner Hebrides and the Minches Special Area of Conservation (SAC), which is 4.95km to the west of the Site boundary, and is designated on the basis of harbour porpoise.

Future Baseline

9.2.18 According to SNH (2018), baseline studies should identify the existing processes of change in the environment, which are likely to influence the character of a site or its surrounds, so that any changes that are predicted to occur due to a project can be distinguished from those which are expected to occur anyway. The predicted future environmental conditions which would exist if a project did not materialise is known for EIA purposes as the 'do nothing scenario'.

9.2.19 Determining a future baseline draws upon information about the likely future use and management of the Site in the absence of development, known population trends (for species), climate change and any other proposed developments (consented or otherwise) that may act cumulatively with the Proposed Development components to affect ecological features.

9.2.20 The majority of the landscape across the Site and immediate environs is presently managed for sheep and livestock grazing and commercial forestry plantation. The 'do nothing scenario' would therefore likely be for the area to remain primarily unchanged if the

[43] Nature conservation sites designated for ornithological interest are considered in Chapter 8.

Proposed Development did not go ahead. The only expected change (with or without the Proposed Development) is the decommissioning of the existing Edinbane Wind Farm.

9.3 Scope of Assessment

Potential Important Ecological Features

9.3.1 The detailed scope of assessment will be defined by the outcome of habitat and further species surveys as the EIA progresses. However, based on an initial desk study appraisal and professional judgment, the following features are likely to be taken forward for further detailed assessment: Annex 1 habitats (including peatland habitats), GWDTE habitats, otters, water vole, bats, pine marten, red squirrel, salmonids, FWPM and wild deer. Should any additional sensitive receptors be identified during the course of surveys, these will be included within the assessment as appropriate.

9.3.2 The Inner Hebrides and the Minches SAC, which is designated for harbour porpoise is not considered an important ecological feature in light of the fact that it falls outside of a likely zone of influence from the Proposed Development. Given the lack of hydrological connectivity, the huge dilution effect in the marine environment and the embedded pollution prevention control measures, impacts to harbour porpoise through changes in hydrology and pollution events would be unlikely.

Likely Significant Effects

9.3.3 In line with the EIA Regulations 2017, the EIA for the Proposed Development will consider those impacts where there is a risk of a likely significant effect only. The following section draws on industry experience and expertise to identify those effect-receptor pathways that may potentially lead to a significant effect. Terrestrial ecology features have been identified where there is potential for likely significant effects based on the activities associated with the Proposed Development; these are summarised in **Table 9.1**. The scoping assessment is based on a combination of an understanding of the Proposed Development, the likelihood of embedded environmental measures, baseline data collected to date, CIEEM guidance on Ecological Impact Assessment (2018), and professional judgement.

Table 9.1 Potentially Significant Ecology Effects

Activity	Change	Feature
Works close to watercourses including watercourse crossings	Loss or damage to habitat; Changes in hydrology; and Pollution events	Otter & water vole
Construction and decommissioning activities (earthworks, excavation)	Direct habitat loss	Annex 1 habitats; SBL/ UKBAP Priority habitats
Construction and decommissioning activities (earthworks, excavation)	Changes in hydrology and Pollution events	GWDTEs
Construction and decommissioning activities (earthworks, excavation)	Loss or damage to habitat	Bats, badger, pine marten, red squirrel

Activity	Change	Feature
Construction and decommissioning activities (earthworks, excavation)	Changes in hydrology; and Pollution events	Salmonids
Construction and decommissioning activities (earthworks, excavation)	Changes in hydrology; and Pollution events	Freshwater pearl mussel
Construction and decommissioning activities (earthworks, excavation)	Displacement, injury or death	Wild deer
Operational wind turbines	Displacement, injury or death	Bats

9.4 Assessment Methodology

9.4.1 The assessment will be undertaken in line with the following legislation and guidance:

- Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (Habitats Directive)[44];
- Natura 2000 Guidance Document 'Wind Energy Developments and Natura 2000[45];
- The Nature Conservation (Scotland) Act 2004 (as amended)[46];
- The Wildlife and Countryside Act 1981 (as amended)[47];
- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine[48];
- The Skye & Lochalsh Local Biodiversity Action Plan[49];
- The Scottish Biodiversity List[50];
- Engineering in the water environment good practice guide: river crossings[51];
- Land Use Planning System SEPA Guidance Note 4[52];
- Habitats and Birds Directives, Nature Conservation; Implementation in Scotland of EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds ('the Habitats and Birds Directives')[53];

[44] European Commission (1992). Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.
[45] European Commission (2010). Natura 2000 Guidance Document 'Wind Energy Developments and Natura 2000. Brussels: European Commission
[46] *Nature Conservation (Scotland) Act 2004*.
[47] Wildlife and Countryside Act 1981. UK: The Stationery Office
[48] Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Winchester: Chartered Institute of Ecology and Environmental Management. Version 1.2 - Updated April 2022.
[49] https://www.cbd.int/doc/nbsap/sbsap/gb-sbsap-scotland-skye-lochalsh-en.pdf
[50] Scottish Natural Heritage (2005). Scottish Biodiversity List.
[51] SEPA (2010). Engineering in the water environment good practice guide – river crossings.
[52] SEPA (2010). Engineering in the water environment good practice guide – river crossings.
[53] Scottish Executive Rural Affairs Department (2000). Habitats and Birds Directives, Nature Conservation; Implementation in Scotland of EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds ('the Habitats and Birds Directives'). Revised Guidance Updating Scottish Office Circular No 6/1995.

- Environmental Impact Assessment Handbook[54] and;
- Research and guidance on restoration and decommissioning of onshore wind farms[55].

Methodology for Assessing Ecological Features

9.4.2 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: EIA Process and Consultation**. This section describes how this methodology will be applied, and adapted as appropriate, in order to correspond with topic specific guidance (i.e. CIEEM, 2018).

9.4.3 An Ecology EIA Report chapter will be produced that will summarise the findings of the desk study, surveys and consultation. This will form the baseline against which the potential impacts of the Proposed Development, alone and cumulatively with other wind farm developments, would be assessed, based on both the importance of ecological features and the nature and magnitude of the changes resulting from the Proposed Development. Any mitigation considered necessary will be identified and residual effects with this in place will be determined.

9.4.4 The significance of the effects resulting from the Proposed Development will primarily be determined by the value of a given ecological feature and the magnitude of change.

9.4.5 Adverse effects will be assessed as being significant if the favourable conservation status of an ecological feature would be lost as a result of the Proposed Development. Beneficial effects will be assessed as those where a resulting change from baseline improves the quality of the environment (e.g. increases species diversity, increases the extent of a particular habitat etc., or halts or slows down an existing decline).

9.4.6 Conservation status is defined as follows (as per CIEEM, 2018):

"For habitats, conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and typical species within a given geographical area;

For species, conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area".

9.4.7 The decision as to whether the conservation status of an ecological feature would alter will be made using professional judgement, drawing upon the information produced through the desk study, field survey and assessment of how each feature is likely to be affected by the Proposed Development.

9.4.8 A similar procedure will be used where designated sites may be affected by the Proposed Development, except that the focus will be on the effects on the integrity of each site; defined as:

"The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified".

9.4.9 The assessment of effects on integrity draws upon the assessment of effects on the conservation status of the features for which the site has been designated. Where these features are not clearly defined, which is often the case for non-statutory biodiversity sites,

[54] Scottish Natural Heritage (2018). *Environmental Impact Assessment Handbook - Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland.*
[55] Scottish Natural Heritage (2013). *Commissioned Report No. 591 Research and guidance on restoration and decommissioning of onshore wind farms.*

it will be necessary to use professional judgement to identify the interest features or obtain additional information about the interest features from NatureScot, Scottish Wildlife Trust, THC or those responsible for identifying these sites, so that sufficient information on which to base an assessment is available.

Design Optimisation and Mitigation

9.4.10 The Proposed Development layout will be informed by baseline ecology survey data, including NVC and peatland condition data, to avoid or minimise direct and indirect impacts to important ecological features (IEFs) including priority peatland habitat and potential GWDTEs. Where impacts cannot be avoided, they will be minimised and opportunities for mitigation, enhancement and compensation will be identified at an early stage for inclusion within a Habitat Management Plan (HMP).

10. Noise

10.1 Introduction

10.1.1 The proposed scope of the noise assessment would consist of the assessment of construction and operational noise for the Proposed Development, including cumulative noise impacts from other relevant developments in the area.

10.1.2 This section seeks agreement from the Environmental Health Representative at the Highland Council (HC) on the proposed approach to the assessment.

10.2 Baseline Conditions

Summary of Baseline Conditions

10.2.1 The Development Site is located on moorland and grazing land. The surrounding area is rural in nature and the closest settlement is Edinbane which is approximately 400 m to the north of the boundary of the Site. The nearest main road (A850) is approximately 1 km to the north from the boundary of the Site. Environmental noise sources in the area include distant road traffic and wind generated noise, including that from existing turbines as well has that associated with its movement of trees and other vegetation.

Data Sources

10.2.2 The data sources most relevant to the assessment of noise from the Proposed Development are those detailed within the 2002 Edinbane Wind Farm Environmental Statement (ES).

10.2.3 Review of the Development Site using current Ordinance Survey mapping and aerial photography has not identified any new sensitive receptors that would be considered in addition to those considered within the 2002 ES (Glen Vic Askill is the closest property to a proposed turbine location, approximately 500 m south of the Site boundary).

10.3 Scope of Assessment

Construction

10.3.1 Whilst the Development Site is at a large distance from residential receptors, they could potentially be affected by noise if impact piling or blasting are required for the construction of the Proposed Development. If pilling is required for construction, noise impacts from this activity will be assessed. As other activities onsite are very unlikely to result in significantly adverse effects given the distance from residential receptors, all other onsite activities are scoped out of the assessment. It is anticipated that any blasting requirements later identified in the design process would be controlled via a blasting management plan as part of a planning condition requirement. Blasting is therefore scoped out of the assessment.

10.3.2 Heavy vehicles for deliveries and large mobile items of plant are anticipated along the local road system. These vehicles could pass closely to residences, which would

otherwise experience low levels of road traffic noise. Therefore, construction road traffic noise is scoped into the assessment.

10.3.3 Due to the distances involved, vibration from onsite plant would have no effect on the nearest residences to the Development Site. Nearby sensitive receptors would be protected from any blasting vibration through a blasting management plan. If large vehicles are required to move through small roads with residential or otherwise vibration sensitive properties, a commitment will be included with the planning submission to survey and repair any road inconsistencies to avoid vibration effects from road traffic. With these considerations in place vibration effects from the construction is scoped out of further assessment.

Operation

10.3.4 When operational, wind turbines emit two types of noise – mechanical noise and aerodynamic noise. The main sources of mechanical noise are from internal components housed within the nacelle, such as the gearbox and generator. Mechanical noise from a modern wind turbine is negligible, as the nacelles are insulated to reduce noise emissions and the various mechanical components housed within the nacelle are acoustically isolated to prevent structure-borne noise.

10.3.5 Aerodynamic noise occurs from the movement of the blades passing through the air. At higher wind speeds, aerodynamic noise is usually masked by the increasing sound of wind blowing through trees and around buildings. The level of masking determines the perceived audibility of the wind farm. The operational noise impact assessment establishes the relationship between wind turbine noise and the natural masking of noise resulting from features of the surrounding environment and assesses noise levels against established standards. This is scoped into the assessment.

10.3.6 It is proposed that operational traffic noise during the operation of the Proposed Development is scoped out as the amount of traffic associated with operation would be minimal.

Decommissioning

10.3.7 In terms of noise and vibration impacts during decommissioning, the effects on any sensitive receptors are likely to be similar in nature, but of lower magnitude, than those during the construction phase (no piling would be anticipated). As a result, it is not proposed to assess the decommissioning phase of the Proposed Development in addition to that of the construction phase. Therefore, the decommissioning element has been scoped out.

10.4 Assessment Methodology

10.4.1 The main objective of the noise assessment is to compare current noise levels in the Development Site area to those that would pertain should the Proposed Development proceed and to determine acceptability for relevant receptors. In this case relevant receptors are considered to be restricted to residential receptors closest to the Proposed Development.

10.4.2 The EIA Report chapter will present a review of relevant policy and how it guides the assessment, the results of noise measurements, and finally the assessment of the noise predictions at relevant residential receptors against the noise limits.

Construction Noise

10.4.3 In order to undertake construction noise calculations, details of the construction programme, phasing of the works and types and numbers of plant are required. Such data would only become available once the contract(s) to construct the Proposed Development have been finalised. Notwithstanding the above, should impact piling be potentially used on site, a worst-case scenario for construction noise assessment, based upon experience of similar projects, will be presented in the EIA Report. Construction noise from piling would be predicted and assessed in accordance with BS 5228-1:2009 + A1:2014 *Code of practice for noise and vibration control on construction and open sites Part 1 – Noise* (British Standards, 2014).

10.4.4 The impact of construction traffic along the local road system would be predicted using *Calculation of Road Traffic Noise* (Department of Transport, 1988) and assessed using the magnitude criteria within the *Design Manual For Roads and Bridges* (Highways England, 2020). The impact of construction traffic along the site access route and the interim access track will be predicted and assessed in accordance with BS 5228-1.

10.4.5 In most cases, construction noise (including construction traffic) is controlled through the implementation of mitigation measures (such as limiting hours during which construction can be undertaken) and undertaking construction works in accordance with good practices as described in BS 5228-1 (such as using well maintained and serviced plant, and the appointment of a Site contact to whom complaints/queries can be directed).

Operational Noise

10.4.6 The proposed operational noise assessment would be undertaken in accordance with *ETSU-R-97: The Assessment and Rating of Noise from Wind Fa*rm' (ETSU-R-97 Guidance, 1996) and the assessment methodology advocated within the Institute of Acoustics *A Good Practice Guide to Applications of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise* (IoA GPG, 2013).

10.4.7 The ETSU Guidance advises that any noise restrictions placed on a wind farm must balance its environmental impact against the national and global benefits that would arise through the development of renewable energy sources:

10.4.8 "The planning system must therefore seek to control the environmental impacts from a wind farm whilst at the same time recognising the national and global benefits that would arise through the development of renewable energy sources and not be so severe that wind farm development is unduly stifled."

10.4.9 In line with ETSU-R-97 The Assessment and Rating Of Noise From Wind Farms (ETSU-R-97) (The Working Group on Noise from Wind Turbines, 1996), at the nearest noise sensitive receptors (NSRs) where turbine noise levels are predicted to be above 35 dB L_{A90}, or 45 dB L_{A90} for financially involved properties (at wind speeds up to 10 m/s), a further and more detailed assessment in accordance with ETSU-R-97 will be required.

10.4.10 An initial 'screening' exercise will be undertaken on the basis of the latest turbine layout, a suitable candidate turbine representative of the proposed hub height and generating capacity, or, if this is not available, then an assessment envelope will be created. The exercise will also consider nearby (within 10km) developments for a cumulative assessment (with any considered likely noise contributors based on size or proximity included within the noise model).

10.4.11 In the event that a more detailed assessment in accordance with ETSU-R-97 is required, agreement will be sought with THC to undertake the assessment using available baseline

noise data from the original 2002 ES or, where required, more recent baseline data obtained for nearby wind farm developments.

10.4.12 If it is determined that more recent baseline data should be used, or a new baseline survey is required, agreement will be sought with THC to determine the appropriate method of adjusting baseline levels, so they do not account for the existing Edinbane Wind Farm.

10.4.13 Noise limits for the detailed assessment would be defined separately for daytime and night-time. During quiet daytime periods (18:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays), noise limits are as follows:

- 5 dB above the background noise curve for wind speeds up to 12 m/s;
- where background noise levels are below 30 – 35 dB LA90, 10 min, the lower limit should be fixed at 35 – 40 dB; and
- For properties with a financial interest in the scheme, the lower limit is fixed at 45 dB.

10.4.14 For the cumulative assessment, a lower limit of 40 dB will be used to assess noise during the daytime at those wind speeds where the background noise level + 5 dB is lower than 40 dB.

10.4.15 For night-time periods (23:00 – 07:00 every day), noise limits are as follows:

- 5 dB above the background noise curve for wind speeds up to 12 m/s;
- The lower limit is fixed at 43 dB; and
- For properties with a financial interest in the scheme, the lower limit is fixed at 45 dB.

10.4.16 Noise modelling would be undertaken using software adopting methodologies advocated by the IOA GPG. It has been assumed that the proposed wind turbines will not produce any tonal noise unless identified within manufacturer data used for the various candidate turbine options. Currently, a consideration of Amplitude Modulation is only possible once a wind farm is operational and planning conditions should consider developing guidance where relevant at the appropriate time.

10.4.17 The assessment of significant operational noise effects is based upon compliance with the ETSU-R-97 i.e. a breach of the noise limits indicates a ‘significant’ effect, whereas compliance with noise limits indicates a ‘not significant’ effect. It is acknowledged that the ETSU-R-97 approach does not directly aim to determine significance in an EIA context, rather it represents a balance between the need for wind energy and the need to protect residential amenities. Since the purpose of identifying significant effect during EIA is to ensure they are taken into account in the ‘planning balance’, for the purposes of this assessment it is assumed that noise effects up to the ETSU-R-97 noise limits have already been taken into account and thus only noise levels exceeding the ETSU-R-97 noise limits are deemed to be ‘significant’ and require further consideration.

10.4.18 On the basis of the above, where noise levels exceed the ETSU-R-97 noise limits, identification of appropriate mitigation to ensure compliance with the specified limits would be required. These may include adoption of quieter turbines; reducing the power rating, and thus the noise emission of particular turbines in particular wind environments; or design of a noise management plan which varies the operation of the wind turbines dependent on the existing wind direction.

11. Geology, Hydrology and Hydrogeology

11.1 Introduction

11.1.1 This chapter considers the potential effects of the Proposed Development with respect to geology, hydrology (including flood risk) and hydrogeology. The chapter should be read in conjunction with the relevant parts of **Chapter 9: Ecology**, where common receptors have been considered and where there is an overlap or relationship between the assessment of effects.

11.2 Baseline Conditions

Data Sources

11.2.1 The appraisal of existing (baseline) conditions for the purposes of this chapter has involved the collection and interpretation of a range of data and information from published material, plus consultations relating to the local and wider hydrological environment with statutory bodies, principally SEPA and the Highland Council (HC). The data collected, and other sources of information, are listed in **Table 11.1**. The hydrology assessment is also inter-related with, and uses information from, other chapters of this Scoping Report, such as **Chapter 9: Ecology**.

Table 11.1 Sources of Desk Study Information for Geology, Hydrology (Including Flood Risk) and Hydrogeology

Source	Data
Ordnance Survey (OS) 1:50,000, Landranger Sheet 23 North Skye **OS 1:25,000, Explorer Sheet 410: Skye – Portree & Bracadale** **OS 1;10,000 Raster map (Bing Maps)**	Topography and features
Centre for Ecology and Hydrology (CEH) National River Flow Archive (www.ceh.ac.uk/data/nrfa/index.html) **Rainfall data https://www.metoffice.gov.uk/** **Climate station data: Prabost (Isle of Skye) https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gf5wbt9v5**	Climate
British Geological Survey (BGS) Hydrogeological Map of Scotland (1:625,000) (1988) **BGS GeoIndex (onshore) (1:50,000)**	Geology, ground conditions and hydrogeology

Source	Data
BGS/Natural Environment Research Council (NERC). A GIS of Aquifer Productivity in Scotland. Explanatory Notes. Commissioned Report CR/04/047N: http://nora.nerc.ac.uk/504764/1/CR-04-047N_SEPA%20Aq%20productivity.pdf **BGS Aquifer classification map layer on Scotland's Environment website https://map.environment.gov.scot/sewebmap/** **SEPA/BGS/SNIFFER. Vulnerability of Groundwater in the Uppermost Aquifer (Scotland)**	
National soil map of Scotland (Macaulay Institute for Soil Research) http://soils.environment.gov.scot/	Soils and peat
River Network Map **CEH National River Flow Archive (NRFA) (www.ceh.ac.uk/data/nrfa/index.html)**	Hydrology and flows
SEPA flood map (http://map.sepa.org.uk/floodmap/map.htm) **Landmark 1 in 75, 1 in 100 and 1 in 1000 year flood maps**	Flood risk
Scottish Government (SGt) The River Basin Management Plan for Scotland River Basin District 2015-2027 **SGt interactive mapping (https://map.environment.gov.scot/sewebmap/?layers=riverClass)** **SEPA interactive mapping facility for the Scotland River Basin Management Plan (RBMP) (https://www.sepa.org.uk/data-visualisation/water-environment-hub/?riverbasindistrict=Scotland)** **SEPA data request: information on river water quality**	RBMP and water quality
SEPA data request: information on locations of Controlled Activities Regulations (CAR) licences. Private Water Supplies (PWSs) data request directly to HC **SGt. Drinking Water Protected Areas. https://www.gov.scot/publications/drinking-water-protected-areas-scotland-river-basin-district-maps/** **SGt Maps of the Drinking Water Protected Areas (DWPAs, Scotland): http://www.scotland.gov.uk/Topics/Environment/Water/17670/ProtectedAreasMaps2013**	Abstractions and discharges
https://sitelink.nature.scot/ **Ecology surveys - as per Chapter 9: Ecology**	Wetlands and peatlands

Current Baseline

Study Area

11.2.2 The Study Area is focussed on the Development Site and a 2 km buffer area immediately beyond it.

Current Baseline

11.2.3 The Development Site is located on a high ridge of several rocky peaks including Cruachan Glen Vic Askill and Beinn a' Chearcaill which forms a ridge trending south to north and has elevations of between 264 and 295 mAOD. Topography falls steeply either side of the ridge line and to a col located to the east of Cruachan Bein a' Chearcaill located at around 150 mAOD elevation. Ground elevations decrease within valleys to approximately 100 mAOD and 80 mAOD to the north and south of the Site respectively. The Development Site is generally formed of an area of moorland which is used for rough grazing bordered by large areas of forestry, particularly along its eastern boundary. The location has high average annual rainfall of 1769 mm (1991 to 2020), as recorded at the Skye climate station at Prabost, approximately 7 km to the east of the Site.

11.2.4 The bedrock geology of the Development Site mainly comprises extrusive igneous rocks of the Skye Lava Group including basalt, microgabbro, hawaiite and mugearite of the Palaogene age. The main fault lines trend north-west to south-east through the Site, some of which show associated mafic igneous dykes.

11.2.5 The superficial deposits covering the Development Site comprise an extensive layer of peat with areas of exposed bedrock along the main ridge of Beinn a Chearcaill and leads out in north westerly line to Glac na Brothaig Airde. Generally, there is no superficial deposits underlying surface water courses but small areas of till are present particularly to the west and south of the Site where there are tributaries flowing into the Abhainn Choishleader and Ose River respectively.

11.2.6 Soil cover in the area is variable with exposed rock along the main ridge of Beinn a Chearcaill to Glacna Brothaig Airde. Peaty gleys are found on higher ground and blanket peats are present in the lower lying valley. To the south of the Development Site, around Gen Vic Askill Farm, the soils are predominantly thinner with mineral podzols along valley sides with patches of wet heath and blanket mire in the water logged topographic hollows.

11.2.7 The Palaeogene bedrock beneath the Development Site is classified as a 2C, low productivity aquifer where flow is virtually all through near-surface fractures and other discontinuities. As a result, the bedrock can locally yield only small amounts of groundwater with short and localised flow paths in the weathered zone. Productivity yields from boreholes are typically low ranging between 0.1 – 1 l/s. Superficial deposits across the site are not a significant aquifer. The Skye North (ID: 150688) groundwater body is classified as having Good overall status.

11.2.8 The Development Site is characterised by two main drainage catchments that meet at a small watershed to the west of Cruachan Bein a' Chearcaill ridge. Upper tributaries of the Abhainn Choishleader and Allt Ruairidh drain to the north and south of the Site, respectively, with the latter feeding into the River Ose. To the east of the Beinn a' Chearcaill small surface watercourses drains to the east/ north-east and south before feeding into the Treaslane River (ID: 20731) Water Framework Directive (WFD) surface water body (currently classified as having Good overall status), outside of the Site boundary. There are no significant sized standing water bodies within the survey area. The Abhainn Choishleader (ID: 20730) WFD surface water body is located in the Isle of Skye Coastal catchment of the Scotland river basin district and is classified as achieving Good overall status. The watercourses on the Site drain into the Loch Greshornish (ID: 200133) and River Ose (ID: 20725) WFD surface water bodies, to the north and south respectively, and are both currently classified as having Good overall status.

11.2.9 The nearest river gauging station is on the Snizort at Skeabost (No. 105001) at NGR NG 414 486, approximately 5 km to the east. This gauge has a flow record covering 2001 - 2021.

11.2.10 Within the Development Site there is a high to moderate risk from surface water (pluvial) flooding along the course of several tributaries, particularly along the lower reaches of the Abhainn Choishleader. Small areas of surface flooding are also indicated as a high risk along some drainage routes.

11.2.11 The closest private water supplies (PWSs) in the area are located 0.9 km and 2.5 km from the Development Site respectively and are abstracted from streams or springs: Glen Vic Askill and dwellings at Balmeanach. The supply is derived from the streams that were determined in the Edinbane Wind Farm Environmental Statement (2002) as being unaffected by that development. A data request for updated PWS data will be issued to the HC as part of the EIA.

11.2.12 A surface drinking water protected area associated with the Baile Meadhanach/ Balmeanach area is located approximately 1 km to the south-west of the Development Site, although this does not appear to be in hydraulic connection with the Site.

11.2.13 The closest nature conservation site is the An Cleireach Site of Special Scientific Interest (SSSI) which comprises an area of Tertiary igneous intrusion which is of significant petrogenetic importance. This habitat area is approximately 500 m to the west of the Site. A Geological Conservation Review Site, Ros a' Mheallain, is located approximately 1 km south of the Site. Ros a' Mheallain is a mountain summit in the Duirinish to Black Cuillin region which has been designated as containing geological and geomorphological features of national and international relevance.

11.2.14 Tributaries on the upper reaches of the watercourses within the Development Site could feed habitats that are otherwise regarded as Groundwater Dependent Terrestrial Ecosystems (GWDTEs). In the most part, the presence of peat and low permeability bedrock ensures that any groundwater levels will be local and perched. Therefore, wider-scale groundwater supply to the habitats identified is limited, with the majority of the supply coming instead from surface or very near-surface infiltration and surface runoff.

11.2.15 The Skye and Lochalsh Rivers Trust (SLRT) have noted that the River Ose has historically, supported substantial Atlantic salmon (Salmon trutta) and anadromous brown trout (Salmon trutta), as well as European eels (Anguilla anguilla), although numbers are now depressed.

Future Baseline

11.2.16 The Site is primarily managed for sheep/cattle grazing with the other main land use in surrounding area being commercial forestry. It is not expected that land use and management would change in the absence of the Proposed Development. The only exception (with or without the Proposed Development) is the decommissioning of the existing Edinbane Wind Farm.

11.3 Scope of Assessment

Planning Policy Context

11.3.1 National Planning Framework 3 sets the long-term context for development planning in Scotland. However, NPF3 does not contain any specific policies with regard to Geology, Hydrology (including flood risk) and Hydrogeology, and onshore wind energy developments.

11.3.2 The Scottish Planning Policy sets out national planning policies that reflect the priorities of the Scottish Ministers for the operation of the planning system and the development and

use of land through sustainable economic growth. SPP 161 -166 relate to wind farms in general, whilst SPP 254 - 268 specifically cover flooding and drainage.

11.3.3 A number of policies relevant to geology, hydrology and hydrogeology are found within the Local Development Plan Environmental report.

Potential Receptors

11.3.4 Receptors that could be significantly affected by the Proposed Development and that therefore need to be taken forward for further consideration are identified within the baseline description above and comprise: the following:

- Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and the Treaslane River watercourses and Loch Greshornish WFD surface water bodies);
- People, property and infrastructure downstream (flood risk);
- Abstractions, springs and water resource use; and
- Water conditions supporting conservation sites (including GWDTEs).

11.3.5 Receptors that are likely be significantly affected will be assessed on the basis of their value/ sensitivity and the magnitude of change to which they will be exposed to as a result of the Proposed Development.

11.3.6 In terms of the receptors 'scoped out' from further assessment, these include the following:

- Groundwater within the peat which is not identified as an aquifer by the BGS and so is not regarded as an aquifer receptor in this assessment. However, this groundwater is still taken account of in the assessment in terms of its role in supporting the mosaic of peatlands and GWDTEs; and
- Solid geology, recognised as a SSSI (An Cleireach and Ros a' Mheallain) which will not be affected by activities on the Development Site.

Likely Significant Effects

11.3.7 The likely significant hydrological and hydrogeological effects that will be taken forward for assessment in the EIA are summarised in **Table 11.2**.

Table 11.2 Likely Significant Geology, Hydrology and Hydrogeology Effects

Activity	Effects	Receptors
Land preparation (earthworks and excavation of the turbine foundations and borrow pits).	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Excavation and fill leads to disruption of surface and near-surface flow paths and	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk)

Activity	Effects	Receptors
	changes to the drainage regime, most typically increased runoff and flood risk. Dewatering interception of groundwater leading to a loss of water resource and disruption of groundwater support (baseflow) to watercourses. Ground disturbance and destruction of geological structures.	Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)
Soil compaction and temporary hardstanding.	Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Reduced infiltration capacity results in increased runoff and flood risk, and reduced recharge to groundwater, leading to loss of water resource and disruption of baseflow to watercourses. Ground disturbance and destruction of geological structures.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk) Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)
Land clearance and deforestation.	Land clearance and ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Land clearance leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Land clearance leads to breakdown of peat structure and disturbance of peat hydrology.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk) Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)

Activity	Effects	Receptors
Peat working.	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Peat disturbance leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Peat disturbance leads to breakdown of peat structure and disturbance of peat hydrology.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk) Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)
Material stockpiling/removal (quarrying).	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Excavation and fill leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Dewatering interception of groundwater leading to a loss of water resource and disruption of groundwater support (baseflow) to watercourses.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, and Allt Ruairidh/River Ose watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk) Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)
Watercourse crossings.	Bank and bed disturbance leads to sediment loading, changes in morphology and pollution of watercourses. Contamination of watercourses due to accidental release of pollutants during works.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Abstractions, springs and water resource use

Activity	Effects	Receptors
Track and crane pad placement.	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Track and crane pad placement leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Ground disturbance and destruction of geological structures.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk) Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)
Control building and potential substation placement.	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Control building and potential substation placement leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Ground disturbance and destruction of geological structures.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk) Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)
Operational facilities and activities.	Exposed ground leads to continued sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during maintenance activities. Contamination of soils, surface waters and groundwater due to control building and substation chemical leaks and concrete leaching.	Lochs and lochans, watercourses and associated WFD surface water bodies (such as Abhainn Choishleadar, Allt Ruairidh, River Ose and Treaslane River watercourses and Loch Greshornish WFD surface water bodies) Downstream humans, property and infrastructure (flood risk)

Activity	Effects	Receptors
	Continuation of flow disruption, reduced infiltration capacity and peat disruption effects.	Abstractions, springs and water resource use Water conditions supporting conservation sites (including GWDTEs)

11.3.8 The main potential hydrological / hydrogeological impacts associated with the Proposed Development relate to the construction phase, in particular from tracks and watercourse crossings. The EIA will identify the location and the nature of the impact from these construction and upgrading activities, in particular the potential for the generation of silt-laden runoff. It will then prescribe measures to be adopted during construction to mitigate against negative impacts on the water environment.

11.3.9 Other activities of relevance include the construction of wind turbine foundations and crane pads, the control building and potential substation. The impacts from these activities, such as the leaching of concrete residues to the water environment and changes in the runoff/ recharge characteristics, will also be addressed in the EIA. Again, mitigation measures will be outlined that would reduce negative impacts.

11.3.10 The possibility for borrow pits and stockpiling will be explored, and should the Development Site be suitable for these elements, the impacts these would have on the water environment will also be assessed.

11.3.11 Impacts during decommissioning are likely to be similar to those during the construction phase, but would depend on the exact nature of the decommissioning activities that take place. However, it is likely that the ground disturbance would be much less. Mitigation similar to that implemented during the construction and operational phases (updated to reflect changes in legislation/guidance) would also help ensure that the significance of such impacts is minimised, and it is therefore proposed that consideration of decommissioning effects is 'scoped out' of the EIA.

11.4 Assessment Methodology

11.4.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 3**: **EIA Process and Consultation**. This section describes how this methodology will be applied, and adapted as appropriate, to address the specific needs of the hydrology (including flood risk) and hydrogeology assessment.

11.4.2 The EIA Report chapter will summarise the findings of the desk study and consultation, these together forming the baseline against which the potential impact of the Proposed Development, alone and cumulatively with other wind farm developments will be assessed.

11.4.3 The significance of the effects resulting from the Proposed Development is primarily determined by the value of a given water feature and the magnitude of change. In terms of the hydrology and hydrogeology, the key types of effects relate to water quantity (level and flow) and quality. However, depending on the effects on surface water flows, there may also be effects on immediate and downstream morphology and sediment dynamics and flood risk.

11.4.4 Therefore, the assessment will be based on both receptor importance and the nature and magnitude of the impact as a result of the Proposed Development. All mitigation considered necessary will be identified and residual effects with this mitigation in place will

be determined. It is intended that no residual significant effects will remain following adoption of the proposed mitigation, but whether this is achievable will be investigated as part of the EIA.

12. Traffic and Transport

12.1 Introduction

12.1.1 With reference to applicable policies, guidance and strategies, the Traffic and Transport chapter of the EIA Report will assess the impact of the Proposed Development on the existing road network in the area, with the study area including all transport routes from the expected delivery port (Port of Kyle of Lochalsh).

12.1.2 The assessment will focus on the construction related activities as it is during this phase of the Proposed Development that the main impacts associated with the movement of vehicles carrying construction materials on the highways network will occur. This includes abnormal loads associated with the delivery of large turbine components, particularly blades.

Planning Policy Context

12.1.3 The Traffic and Transport EIA Report Chapter will base the method of assessment on the Guidelines for the Environmental Assessment of Road Traffic (GEART), Institute of Environmental Management and Assessment (IEMA) (1993).

12.1.4 The Traffic and Transport EIA Report chapter will take into account national policies referred to in **Chapter 4: Planning Policy Context**.

12.1.5 The Traffic and Transport EIA Report chapter will also take into account local policies published by the Highland Council:

- Highland-wide Local Development Plan, The Highland Council (April 2012);
- West Highland and Islands Local Development Plan, The Highland Council (September 2019); and
- Roads and Transportation Guidelines for New Developments, The Highland Council (May 2013).

12.2 Baseline Conditions

Data Sources

12.2.1 The sources of information that will be used for the Traffic and Transport assessment are listed below in **Table 12.1.**

Table 12.1 Sources of information used for the Traffic and Transport assessment

Source	Data
Google Earth/Google Maps	Online mapping
Crashmap	Personal Injury Accidents (PIAs)
Department for Transport	Traffic Counts (AADT)

Current Baseline

12.2.2 It is anticipated that the Abnormal Indivisible Loads (AIL) [transporting turbine equipment] will travel by road from the Port of Kyle of Lochalsh, which is the closest port in the region capable of handling wind turbine equipment. The Port of Kyle of Lochalsh has been frequently used for the delivery of wind turbine components in this region.

12.2.3 The existing Ben Aketil Wind Farm access track from A850 (west of Edinbane) can also be utilised for AIL delivery by extending the track to link to the Proposed Site (as shown on **Figure 1.2**). This track is also a part of the Ben Aketil Forest Trail. Alternatively, the route may be approached from the A863 before accessing the Ben Aketil Windfarm access track from the A850. The existing internal tracks will be utilised and upgraded wherever possible, and additional new track that will be required based on the location of the proposed wind turbines and other related infrastructure.

12.2.4 The sections of the road network included within the assessment will be determined on the basis of the potential effect of increased traffic associated with the construction of the Proposed Development, on identified sensitive receptors.

12.3 Scope of Assessment

12.3.1 The majority of traffic will be generated during the construction phase, with relatively little traffic generation anticipated during operation. Consequently the main transportation impacts will be associated with the movements of commercial heavy goods vehicles (HGVs) travelling to and from the site during the construction phase of the Proposed Development and this will be considered in the EIA Report.

12.3.2 Based on currently evolving turbine technologies, it is possible that a turbine model utilising “split blade”[56] technology could be used for the Proposed Development. Abnormal Load Conveyance methods are also evolving and the transportation of the blade components to site may use a ‘blade lifter’[57] vehicle arrangement. The use of this technology would reduce the impact of abnormal load deliveries to site by transporting blades via a more manageable vehicle size and arrangement and can allow for larger blades to be used in locations previously inaccessible. The use of the split blade technology and the blade lifter vehicle arrangements will be considered during the EIA process.

12.3.3 Once the Proposed Development is operational, it is envisaged that the amount of traffic associated with the scheme would be minimal. Occasional visits may be made to the Site for maintenance checks. The vehicles used for these visits are likely to be a 4x4 or similar and there may be an occasional need for an HGV to access the Site for maintenance and repairs.

12.3.4 It is considered that the effects of operational traffic would be negligible and therefore it is proposed that the assessment of the operational phase of the Proposed Development is ’scoped out’ of the EIA.

12.3.5 On the assumption that below ground infrastructure and access tracks will remain in situ, less traffic will be generated during decommissioning than during construction. As such, the effects on the road network are likely to be similar in nature during decommissioning though of lower magnitude than during construction as less vehicle movements would be

[56] This is where the blade component is split into two sections for transportation to site, the GE Cypress platform being an example of such technology.
[57] This is comprised of a haulage vehicle pulling a set of axels on which a blade lifter adapter is fitted, this lifting and carrying the blade vertically to negotiate more horizontally constrained sections of road (where overhead line infrastructure allows).

required. Furthermore, taking a general assumption of increased traffic in future decades after the operational phase, the net increase in traffic flow as a result of decommissioning would be proportionally lower in comparison to during construction.

12.3.6 As such it is proposed that the assessment of the decommissioning phase of the Proposed Development is 'scoped out' of the EIA.

Potential Receptors

12.3.7 It is assumed that construction materials would be sourced from one of the local quarries which are not known yet. Two potential routes between Port of Kyle of Lochalsh and site have been identified:

- Route 1: A87 – A850 – Ben Aketil Forest Trail – Site Access; and
- Route 2: A87 – A863 –A850- Ben Aketil Forest Trail – Site Access

12.3.8 The traffic impact study area is likely to be defined as comprising the following sections of the road network:

- A863 (between Balmeanach and Sligachan);
- A87 (between Borve and Kyle of Lochalash); and
- A850 (between Borve and Ben Aketil Forest Trail).

12.3.9 These highways provide comprehensive coverage of the routes surrounding the Site. Beyond these roads, traffic from the Proposed Development would access the wider road network where its effect would be diluted by existing traffic on these routes or would distribute to a point where the effects from traffic would be minimal.

12.3.10 The receptors along the highways noted above have been identified as forming the scope of the assessment in relation to potential traffic-related effects. Receptors are the users or beneficiaries of highway network assets and facilities such as pedestrians, cyclists, equestrians and drivers who travel within the vicinity of the Proposed Development.

12.3.11 The assessment will be based on GEART (IEA, 1993) which identifies the following groups and special interest groups that may be affected:

- People at home;
- People at work;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations such as hospitals, churches, schools and historical buildings;
- Pedestrians;
- Cyclists;
- Open spaces, recreational areas and shopping areas;
- Sites of ecological and nature conservation value; and
- Sites of tourist/visitor attractions.

Likely significant effects

12.3.12 The potential effects of the Proposed Development that are likely to be significant with regards to Traffic and Transport, and those which will be subject to further assessment are set out below.

- Severance: the separation of people from places and other people and places or impede pedestrian access to essential facilities;
- Driver delay: traffic delays to non-development traffic;
- Pedestrian amenity: the effect on the relative pleasantness of a pedestrian journey as a result of changes in traffic flow, traffic composition and pavement width / separation from traffic;
- Pedestrian delay: the ability of people to crossroads as a result of changes in traffic volume, composition and speed, the level of pedestrian activity, visibility and general physical conditions of the Proposed Development;
- Fear and intimidation: these may be experienced by people as a result of an increase in traffic volume and its proximity or the lack of protection caused by such factors as narrow pavement widths; and
- Accidents and safety: the risk of accidents occurring where the Proposed Development is expected to produce a change in the character of traffic.

12.4 Assessment Methodology

12.4.1 The guidance used when assessing the potential significance of road traffic effects is summarised in GEART (IEMA, 1993), which states that:

"The detailed assessment of impacts is…likely to concentrate on the period during which the absolute level of an impact is at its peak, as well as the hour at which the greatest level of change is likely to occur." (Paragraph 3.10).

12.4.2 To assess the impact at its peak, the likely percentage increase in traffic is determined by comparing estimates of traffic generated by the Proposed Development with future predicted baseline traffic flows on the roads used by construction traffic in vicinity of the Site.

Determination of significance

12.4.3 The EIA Regulations recognise that developments will affect different environmental elements to differing degrees, and that not all of these are of sufficient concern to warrant detailed investigation or assessment through the EIA process. The EIA Regulations identify those environmental resources that warrant investigation as those that are *"likely to be significantly affected by the development"*.

12.4.4 The EIA Regulations do not define significance and it will be necessary to state how this will be defined for the EIA. The significance of an effect resulting from a development is most commonly assessed by reference to the sensitivity (or value) of a receptor and the magnitude of the effect. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the development.

12.4.5 GEART provides two rules that are used to establish whether an environmental assessment of traffic effects should be carried out on receptors:

- **Rule 1**: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- **Rule 2**: Include sensitive areas where traffic flows are predicted to increase by 10% or more.

12.4.6 It should be noted that, according to GEART, predicted traffic flow increases below 10% are generally not considered to be significant as daily variations in background traffic flow may fluctuate by this amount. Changes in traffic flows below this level are, therefore, assumed not to result in significant environmental effects and would not be assessed further.

12.4.7 The main transportation impacts associated with a wind farm relate to the construction phase of the development. This would include the movement of HGV traffic travelling to and from a site bringing in material for the construction of the access, tracks, foundations, crane hard standing etc. The assessment will identify the number of HGV movements required for the Proposed Development.

12.4.8 Other construction impacts relate to the delivery of the turbine components. These components are large and require abnormal load delivery. The assessment will identify the number of abnormal loads required for the Proposed Development.

12.4.9 The assessment will include the identification of the baseline data through relevant survey information for all the roads associated with the different elements of the Proposed Development. The assessment will identify:

- Existing traffic flows;
- Potential impacts (of changes in traffic flows) on local roads;
- Potential impacts (of changes in traffic flows) on users of those roads; and
- Potential impacts (of changes in traffic flows) on land uses and environmental resources and sensitive receptors fronting those roads, including the relevant occupiers and users.

12.4.10 Error! Reference source not found.**2** summarises the rationale used to determine the sensitivity against the corresponding receptors as part of the assessment as contained in GEART. Professional judgement is also used to determine the sensitivity of the receptor.

Table 12.2 GEART Receptor Sensitivity Rational

Sensitivity	Description/ reason	Receptor
High	Receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident blackspots, retirement homes and urban/residential homes without footways that are used by pedestrians and cyclists.	Residents/workers travelling to and from work or home on foot and by bicycle, school children, leisure walkers and equestrians.
Medium	Traffic flow sensitive receptors including congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycle ways, community centres, parks, recreation facilities.	Residents/workers travelling to and from work or home on foot and by bicycle, people visiting these land uses.

Sensitivity	Description/ reason	Receptor
Low	Receptors with some sensitivity to traffic flows: places of worship, public open space, nature conservation areas, listed buildings, tourist/visitor attractions and residential areas with adequate footway provision.	Residents/workers travelling to and from work or home on foot or bicycle and people visiting these land uses.
Negligible	Receptors with low sensitivity to traffic flows: Motorway and Dual Carriageways and/or land uses sufficiently distant from affected routes and junctions.	Residents/workers travelling by foot or by bicycle.

12.4.11 The sensitivity of each highway link included in the assessment will be assigned a sensitivity in accordance with GEART. This is based on the proximity of sensitive receptors to the highway link and the highway environment. Sensitivity judged as High or Medium results in Rule 2 (sensitive areas where traffic flows are predicted to increase by 10% or more) being considered. Sensitivity judged as Low or Negligible results in Rule 1 being considered (where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%)).

12.4.12 The classification of a likely traffic and transport effect will then be derived by considering the sensitivity of the receptor against the magnitude of change, with the details of the assessment presented in the EIA Report.

12.4.13 **Table 12.3** provides a summary of the magnitude of change definitions for each transport effect, with the thresholds used to determine this being based on guidance within GEART.

Table 12.3 Magnitude of Change Summary

Magnitude of Change				
Transport Effect	Major	Moderate	Minor	Negligible
Severance	Change in total traffic or HGV flows over 91%	Change in total traffic or HGV flows of 61-90%	Change in total traffic or HGV flows of 31-60%	Change in total traffic or HGV flows of less than 30%
Driver Delay	Change in total traffic or HGV flows over 91%	Change in total traffic or HGV flows of 61-90%	Change in total traffic or HGV flows of 31-60%	Change in total traffic or HGV flows of less than 30%
Pedestrian Amenity and Delay	Change in total traffic or HGV flows over 91%	Change in total traffic or HGV flows of 61-90%	Change in total traffic or HGV flows of 31-60%	Change in total traffic or HGV flows of less than 30%
Accidents and Safety			Informed by a review of existing collision patterns and trends based upon the existing personal injury accident records and the forecast increase in traffic.	

12.4.14 The classification of a likely traffic and transport effect is derived by considering the sensitivity of the receptor (derived from **Table 12.2**) against the magnitude of change (derived from **Table 12.3**) as defined in **Table 12.44** below. The shading indicates those significance ratings that are deemed to be 'significant' effects.

Table 12.4 Significance Criteria

		Magnitude of change			
		Major	**Moderate**	**Minor**	**Negligible**
Sensitivity	**High**	Major	Major / Moderate	Moderate	Minor / Negligible
	Medium	Major / Moderate	Moderate	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Minor / Negligible	Negligible	Negligible	Negligible

12.4.15 Major, Major/Moderate and Moderate effects (shaded in table above) are considered to be significant in terms of the EIA regulations, whilst Minor, Minor/Negligible and Negligible effects are considered to be neutral/not significant.

12.4.16 Consideration will also be given as to whether any of the receptors which would be taken forward for assessment are likely to be subject to cumulative effects because of the Traffic and Transport effects generated by other proposed developments. If this is likely to be the case, a cumulative assessment would be undertaken.

13. Socio-economics

13.1 Introduction

13.1.1 Wind farms have the potential to have both beneficial and negative effects on socio-economics, tourism and recreation. Scottish Planning Policy in regard to wind farm development sets out a number of assessment criteria. These include consideration of effects on the local and national economy and tourism and recreation interests, in addition to benefits and disbenefits for communities. Relevant development plan policies will be taken into account.

Planning Policy Context

13.1.2 **Chapter 4: Planning Policy Context**, provides an overview of planning policy with relevance to the Proposed Development. The Local Development Plan (LDP) contains a policy (67) entitled 'Renewable Energy Development' which takes account of the considerations in the Onshore Wind Energy Supplementary Guidance (2016);

13.1.3 Policy 67 provides support for development proposals for renewable energy generation which are 'located, sited and designed appropriately' and advises that 'the acceptability of any proposed development' should have regard in particular to any significant effects on a number of considerations including 'the impact on tourism and recreational interests, and public access.

13.2 Baseline Conditions

13.2.1 The Proposed Development Site is located within the Highlands. A brief overview of the socio-economic baseline for the area surrounding the Proposed Development Site is set out below.

Population

13.2.2 The population of the Highlands was estimated at 238,060 (National Records of Scotland's 2021 Mid-Year Population Estimates) in 2021. Figures from NOMIS (a service provided by the Office for National Statistics (ONS)) record the resident population in 2020 as being 235,400. There are slightly more females (120,000) than males (115,400). This is also reflective of the situation for Scotland as a whole. 60.7% of the population is of working age, which is slightly lower than the average figures for Scotland and Great Britain.

Employment and Economy

13.2.3 NOMIS statistics show that 74.4% of the population of the Highlands is economically active, slightly lower than the figure for Scotland (77.1%) but lower than for Great Britain (78%), and that 11,300 people (25.6% of the population) are economically inactive, which again is slightly higher than the figure for Scotland and the equivalent figure for Great Britain.

13.2.4 Professional occupations are the dominant employment occupation, followed by Associate Professional Occupations professional occupations. There is no dominant industry for employment with elementary occupations, skilled trades, sales and customer services,

administrative and secretarial roles, caring, leisure and other service occupations; all accounting for around 9-12% each.

Tourism and Recreation

13.2.5 Tourism is an extremely important sector for the Highlands employing around 16,400 people and having a Gross Value Added (GVA) of over £320 m in 2018.

13.2.6 **Figure 13.1** below shows the top five free and paid visitor attractions in the Highlands in 2019, with the most popular free attraction being Glencoe Visitor Centre and the most popular paid attraction being Urquhart Castle.

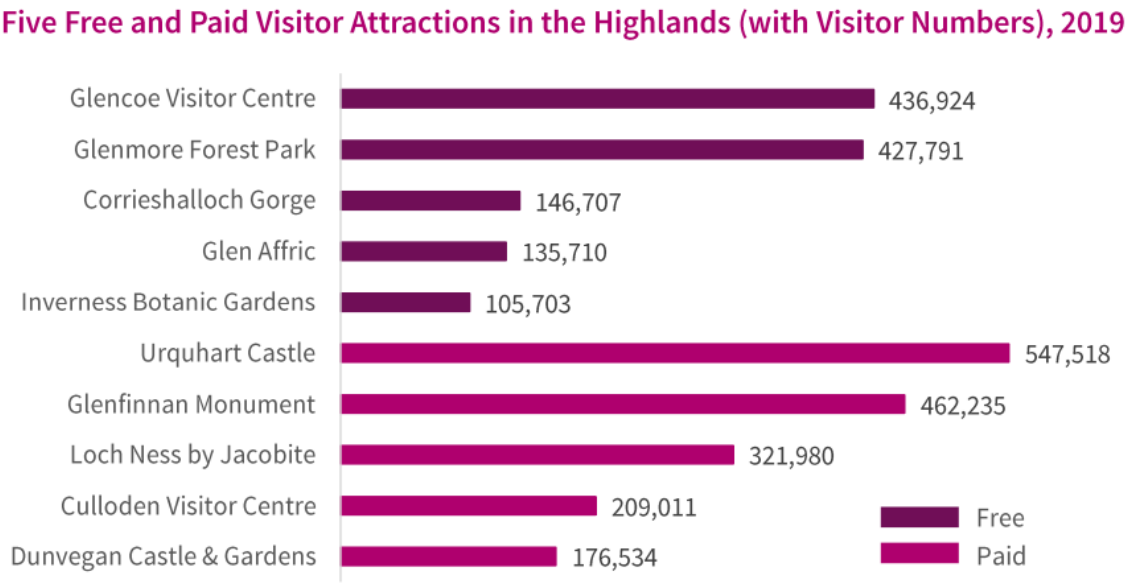

Figure 13.1 Free and Paid Visitor Attractions in the Highlands in 2019.

13.2.7 The Highlands are popular for a number of recreational pursuits including, walking, and watching wildlife and exploring archaeological and geological sites. There are no known recreational pursuits undertaken directly on the Proposed Development Site.

Land Use

13.2.8 The Development Site lies within an area dominated by moorland and surrounding coniferous forestry. In addition, it is remote from major settlements. There are no known formal recreational pursuits undertaken on the Site.

13.3 Scope of Assessment

13.3.1 In order to assess the potential socio-economic effects of the Proposed Development, it is necessary to gain a view as to the current position of the local economy. The character of the local economy will therefore be examined as part of the EIA to provide an overview of potential linkages with the Proposed Development.

13.3.2 The assessment will examine the level of construction activity and job creation and the potential linkages with the wider local economy. This will include an assessment of potential multiplier effects within the local economy.

13.3.3 Tourist and recreational attractions along with any core paths or public rights of way (PRoW) within or surrounding the Development Site identified within the LVIA will form part of the assessment. Ways in which benefits such as improved public and recreational access to the Development Site could be delivered will be examined.

13.4 Assessment Methodology

13.4.1 There is no prescribed approach to a socio-economic assessment within an EIA, so the methodology will follow the general approach of the EIA by assigning a sensitivity or importance to the factors being considered, and then identifying a magnitude of change as a result of the Proposed Development. For many of the socio-economic issues to be considered, the magnitude of change will be assessed using professional judgement under a comparison approach (e.g. looking at the number of jobs to be created in comparison to the number of jobs in the study area).

14. Infrastructure and Other Issues

14.1 Introduction

14.1.1 Specific Advice Sheet Onshore Wind Turbines (Scottish Government, May 2014) identifies that wind turbines might impact on infrastructure, telecommunications, utilities and air safeguarding issues. Effects may, for example, include disruption of microwave rebroadcast links or local radio communication systems. The quality of television reception may also be affected, though to a lesser extent than prior to the switchover to digital transmissions, and viewers may suffer reduction of picture quality and acoustic interference.

14.1.2 This section also considers effects in relation to population and human health, climate, and risk major accidents and disasters as set out in the EIA Regulations.

14.2 Existing Infrastructure, Telecommunications and Broadcast Services

14.2.1 A range of investigations would be undertaken to establish the presence of existing infrastructure associated with utilities such as water, gas, electricity and telecommunications links to establish either the absence of effects or to identify appropriate mitigation to overcome any effects. These matters would be addressed through consultation with the relevant system operators.

14.3 Shadow Flicker

14.3.1 Shadow flicker is a phenomenon that can occur in sunny weather when turbines are operating and the rotating blades cause a flickering effect inside a building where sunlight passes through an opening such as a window or door.

14.3.2 For shadow flicker to occur, the receptor must be directly in line with the wind turbines when the sun is low in the sky and within 10 rotor diameters of a turbine where they are located within 130 degrees either side of north of any turbine. In these circumstances, the moving turbine blade briefly blocks / reduces the intensity of light entering an opening to a room on each rotation, causing a flickering to be perceived. Shadow flicker is generally not perceived outdoors as light is reflected from all directions.

14.3.3 Any properties located within a 130 degree segment either side of due north relative to the turbines and within ten rotor diameters of a turbine (as per guidance) will be assessed for shadow flicker.

14.3.4 Where properties meet these criteria and there is a potential for shadow flicker to occur, the seasonal duration of this effect will be calculated from the geometry of the turbine and the latitude of the Proposed Development. This data will be used to assess potential impacts upon the amenity of local residents and, where necessary, to inform what mitigation measures will be required.

14.4 Aviation

14.4.1 Wind turbines within radar Line of Sight (LoS), and therefore theoretically detectable by radar systems, reflect radio waves that can interfere with aviation radar systems. Turbine induced radar clutter appearing on radar displays can affect the safe provision of Air Traffic Services as it can mask aircraft from the air traffic controller and/or prevent the accurate continued identification of aircraft under control. In some cases, radar reflections from the turbines can detrimentally affect the performance of the radar system itself. Additionally, due to their height, wind turbines could also potentially present an obstruction to low flying aircraft, including military low-level flights.

14.4.2 NATS Tiree Primary Surveillance Radar (PSR) and the MOD Benbecula Air Defence Radar (ADR) have been identified at this stage for inclusion within a LoS Analysis. The Development Site also falls within Low Flying Area 14 (LFA 14), and this will be considered further during consultation and assessment.

14.4.3 Consultations will be undertaken with aviation stakeholders to identify where the Proposed Development is likely to cause any problems in relation to their operations. Where problems are identified, negotiations would be undertaken to seek and agree appropriate mitigation.

14.5 Population and Human Health

14.5.1 The potential effects on population and human health arising from the Proposed Development would be considered in the context of the other factors identified in Schedule 4(4) of the 2017 EIA Regulations. This is on the basis that any environmentally related health issues (both beneficial and adverse) may for example result from exposure to traffic, changes in living conditions resulting from noise, and increased employment opportunities. It is therefore proposed that population and human health effects of the Proposed Development are incorporated within the relevant technical chapters of the EIA Report (i.e. Socio-economics, Traffic and Transport, Noise, and Landscape and Visual (in respect of residential amenity in particular)).

14.5.2 However, to clearly demonstrate that population and human health effects are included in the EIA Report, and to assist with ease of reference, it is proposed that a summary table that identifies the potential effects and the EIA Report chapter that considers the matter in more detail would be included within the 'Other Issues' chapter.

14.6 Climate and Carbon Balance

The 2017 EIA Regulations require consideration of the impact of the project on climate (for example the nature and magnitude of greenhouse gases (GHG) emissions) and the vulnerability of the project to climate change (climate change resilience (CCR)).

A carbon balance calculation will be completed using the Scottish Government Carbon Calculator Tool[58]. This will be reported in a Carbon Balance appendix within the EIA Report. The calculation will include a full lifecycle assessment to determine the carbon benefit of the Proposed Development compared to a reference energy mix within the context of carbon budgets for Scotland and the UK, aligned to a trajectory compatible with limiting the increase in global average temperature below 1.5°C. This will include consideration of GHG emissions in the production, transportation, erection, operation and decommissioning phases of the Proposed Development, together with the loss of peat should such areas not be avoided. As part of the calculations we will include figures for

[58] Scottish Environment Protection Agency (2020). *Carbon Calculator Tool v1.6.1* [online]. Available at: https://informatics.sepa.org.uk/CarbonCalculator/index.jsp [Accessed 19 August 2022].

carbon payback time, carbon dioxide emissions offset and number of homes equivalent that the Proposed Development could power. The appendix will include a table containing justifications for values used in the carbon calculator. Given the inherent carbon benefit of wind farms, a standalone GHG EIA Report chapter is not proposed.

The resilience of the Proposed Development to climate change and extreme climate events will be considered within the detailed design and it is not proposed that a separate assessment is prepared within the EIA Report. The projected impacts of climate change on the Proposed Development will also be considered where relevant. Climate change impacts will be considered within the detailed design of the Proposed Development where appropriate. The design of the Proposed Development will consider climate projections for a variety of environmental parameters (e.g. extreme rainfall, temperature, drought etc.) to ensure that appropriate mitigation measures are embedded within the design. The worst case climatic conditions at the end of the design life of the Proposed Development will be considered.

14.7 Sustainable Resource Use

14.7.1 Although application sites for wind turbine development can encompass large areas of land, the actual built development covers a relatively small area and, in most circumstances, farming/forestry and other land-based activities would continue in and around turbine development. As a result of this, the Proposed Development would result in land take of only a very small proportion of the Development Site, which is unlikely to result in significant environmental effects in terms of land use.

14.7.2 In terms of soil and peat, the design of tracks, turbine foundations, hardstanding, borrow pits etc. would minimise the amount of soil disturbance. Where soils and peat would be excavated, they would be stored on the Development Site in accordance with the Peat Management Plan and the Construction and Environmental Management Plan (CEMP) which would be produced to discharge a planning condition prior to construction, and then used in the restoration of the site post construction to minimise the loss of soil and peat resource.

14.7.3 With regards water, the key environmental effects of this natural resource would be its use during the construction, the potential increase in flood risk and the disturbance of surface and groundwater as a result of construction activities. With regards to construction works, the water resource would be managed in accordance with the CEMP. With regards to surface water and groundwater, potential effects would be addressed in the Geology, Hydrology and Hydrogeology chapter of the EIA Report, with appropriate mitigation measures outlined where required.

14.7.4 The potential effects of the Proposed Development on biodiversity would be addressed within the Ecology and Ornithology chapters of the EIA Report, within which appropriate mitigation would be set out to minimise the potential damage to habitats and species during the construction, operation and decommissioning. Mitigation measures would also be detailed in a Habitat Management Plan, which it is expected would be required by planning condition, and also within the CEMP.

14.7.5 As a result, it is not proposed that Sustainable Resource Use is considered as a discrete section of the EIA Report for the Proposed Development.

14.8 Major Accidents and Disasters

14.8.1 The scope for the EIA to consider major accidents and disasters has been initially considered in **Table 14.1** below. Major accidents or disasters have been scoped in where they represent a high risk to the Proposed Development, either from the proposed location

or from the project itself. A high risk is considered to be where there is reasonable likelihood of the accident or disaster occurring, or where the effect of the accident or disaster would lead to the requirement for mitigation which is beyond the usual scope of construction or operational activities. Where an accident or disaster has been scoped in, the EIA Report chapter(s) identified would consider the matter in more detail. This further detail may show that no further assessment is needed, or it may lead onto an appropriate level of assessment and/or identification of appropriate mitigation.

Table 14.1 Major Accidents and Disasters

Major Accident or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	EIA Report Chapter
Biological hazards: epidemics	Low	Very low	Out	The probability of epidemics which would affect the construction or operation of the Proposed Development is considered to be Low. If necessary, government guidance in relation to social distancing would be followed to enable safe construction and operation of the Consented Development.	N/A
Biological hazards: animal and insect infestation	Very low	Very low	Out	The probability of animal and insect infestations which would affect the construction or operation of the Proposed Development is considered to be very low.	N/A
Earthquakes	No	No	Out	Any earthquakes in the vicinity of the Proposed Development would be of a very small magnitude and the design of turbine foundations etc. is adequate to withstand such low magnitude events.	N/A

Major Accident or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	EIA Report Chapter
Tsunamis / tidal waves / storm surges	No	No	Out	The general location of the Proposed Development and its distance from the coast means there is no risk of these phenomena affecting it.	N/A
Volcanic eruptions	No	No	Out	There are no active volcanos in the vicinity of the Proposed Development.	N/A
Famine / food insecurity	Negligible	Very low	Out	The probability of famine / food insecurity which would affect the construction or operation of the Proposed Development is considered to be Negligible.	N/A
Displaced populations	Negligible	Very low	Out	The probability of displaced populations affecting the construction or operation of the Proposed Development is considered to be Negligible.	N/A
Landslide / subsidence	Low	Low	In	A peat slide risk assessment would be undertaken.	Renewable Energy Policy, Carbon Balance and Peat Management
Severe weather: storms	Medium	No	Out	Turbines are equipped with lightning conductors and automatically shut down when wind speeds are at a level which could	N/A

Major Accident or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	EIA Report Chapter
				damage internal components.	
Severe weather: droughts	Very Low	No	Out	The probability of severe drought occurring in the vicinity of the Proposed Development is considered to be very low. Furthermore, turbines would be unaffected by drought conditions.	N/A
Severe weather: extreme temperatures	Low	Very Low	In – severe cold weather could lead to ice build-up on blades.	Ice build-up could lead to ice throw, or to blade damage and throw.	Project Description and other issues chapter.
Floods	Low	Very Low	In – a high level flood risk assessment would be undertaken as part of the EIA.	Damage to turbines or infrastructure from flooding, or increase in flood risk elsewhere from development in flood zones.	Site Selection and Design Evolution, and Hydrology, Hydrogeology & Geology.
Terrorist incidents	No	No	Out	N/A	N/A
Cyber attacks	No	No	Out	N/A	N/A
Disruptive industrial action	No	No	Out	N/A	N/A
Public disorder	No	No	Out	N/A	N/A
Wildfires	No	No	Out	N/A	N/A
Severe space weather	No	No	Out	N/A	N/A
Poor air quality events	No	No	Out	N/A	N/A
Transport accidents	No	Yes	In – abnormal loads and increase in	Abnormal loads or an increase in traffic could lead to an increased risk of accidents.	Design Evolution and Traffic and Transport.

Major Accident or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	EIA Report Chapter
			traffic from construction.	Highway network may be unsuitable for such traffic, further increasing accident risk.	
Industrial accidents	No	Yes	In – from construction and maintenance activities.	Manual labour, working at height and use of specialist plant all bring risk of industrial accidents. Relevant UK health and safety legislation will be adhered to; site construction management practices will include, but are not limited to, temporary diversions of public rights of way, relevant signage and fencing of potentially hazardous construction areas where appropriate.	Construction activities are covered by separate H&S legislation and guidelines. Site Selection and Design Evolution, Geology, Hydrology, and Hydrogeology, and Ecology (pollution).
Electricity, gas, water supply or sewerage system failures	No	Yes	In – site contains electricity transmission cables.	Construction activities or turbine collapse could damage electricity infrastructure. All relevant health and safety legislation will be followed, and industry best practice guidance adhered to. HSE GS6 *Avoiding danger from overhead power lines* will be followed	Site Selection and Design Evolution; and Existing Infrastructure, Telecommunications and Broadcast Services.
Urban fires	No	No	Out	The Proposed Development is not in close proximity to any urban areas.	N/A

Appendix A
Figures

Appendix B
LVIA Methodology

Landscape and Visual Impact Assessment Methodology and Glossary

Contents

1 Introduction

1.1.1 This appendix describes the methodology used within the landscape and visual impact assessment (LVIA) for the Repowered and Extended Edinbane Wind Farm (the 'Proposed Development') which comprises up to 19 turbines with a maximum blade tip height of 200m and associated infrastructure.

1.1.2 This appendix has been structured as follows:

- Overview of LVIA Methodology;
- Data Sources and Site Survey;
- Integrated Design and Assessment;
- Assessing Landscape Effects;
- Assessing Visual Effects;
- Assessing Cumulative Landscape and Visual Effects;
- Evaluation of Significance;
- Nature of Effect;
- Residential Visual Amenity Assessment;
- Night-time Assessment;
- Wild Land Assessment; and
- Production of Zone of Theoretical Visibility (ZTV)s and Visualisations.

1.2 Overview of LVIA Methodology

1.2.1 The LVIA assesses the likely effects of the Proposed Development on the landscape and visual resource, encompassing effects on landscape elements, characteristics and landscape character, designated landscapes, visual effects and cumulative effects.

1.2.2 Essentially, the landscape and visual effects (and whether they are significant) are determined by an assessment of the nature or 'sensitivity' of each receptor or group of receptors and the nature of the effect or 'magnitude of change' that would result from the Proposed Development. The evaluation of sensitivity takes account of the value and susceptibility of the receptor to the Proposed Development. This is combined with an assessment of the magnitude of change which takes account of factors such as the size and scale of the proposed change and the geographical extent. Other factors regarding the nature of the effect such as the duration of change and whether the effect is cumulative are also noted. By combining assessments of sensitivity and magnitude of change, a level of landscape or visual effect as well as the nature of that effect can be evaluated and the significance of the effect determined.

1.2.3 The resulting level of effect is described in terms of whether it is significant or not significant and the type or nature of effect is described as either direct or indirect; temporary or permanent (reversible); cumulative; and positive, neutral or negative. The assessment has also considered the cumulative effects resulting from the Proposed

Development in combination with other existing and consented wind farms, and wind farms at the planning application stage.

1.2.4 The time period for the assessment covers phases of development related to the construction of the Proposed Development and associated infrastructure, its operation for a period of 35 years, and decommissioning.

1.2.5 LVIA unavoidably involves a combination of both quantitative and subjective assessment and wherever possible a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach.

Technical guidance and best practice

1.2.6 The methodology for the LVIA accords with the Landscape Institute and IEMA *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition (GLVIA 3). In addition to planning policy documents and other supporting technical guidance, the LVIA methodology includes, but is not limited to the following:

- Siting and Designing Windfarms in the Landscape, Version 3a, Scottish Natural Heritage (SNH), August 2017;
- Guidance: Spatial Planning for Onshore Wind Turbines – natural heritage considerations, Version 3a, SNH, June 2015;
- Visual Representation of Windfarms, Version 2.2, SNH, February 2017;
- Visualisation Standards for Wind Energy Developments, The Highland Council, July 2016; and
-
- Guidance: Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments, NatureScot, 2021.

Defining **the LVIA Study Area**

1.2.7 The SNH guidance[1] advises that the LVIA Study Area for wind turbines of this height should be based on an area 45km distance from each of the proposed turbine locations as illustrated in **Figure 6.1**. The LVIA Study Area covers a circular area of 46,691m radius from the Site centre (based on a minimum 45km distance from each of the proposed turbines) unless otherwise agreed through consultation.

1.2.8 It is important to note that the boundary of the LVIA Study Area is not the limit of potential visibility. Rather, it is an area defined by SNH, on the basis of research, to determine a suitable LVIA Study Area for the assessment of wind farms which will contain all likely significant landscape and visual effects.

1.3 Data Sources and Site Surveys

1.3.1 A list of the data sources used for this assessment is provided in **Chapter 6**.

[1] Visual Representation of Wind Farms, Version 2.2, SNH (2017).

Desk-based and site survey work

1.3.2 The LVIA is informed by desk-based studies and site and field survey work undertaken within the LVIA study area.

1.3.3 A preliminary desk-based assessment was undertaken of landscape and visual receptors using a range of map-based data and related computer and digital analysis including ZTV, digital and / or surface terrain modelling and wireframe and street view software. This information used to inform initial assessments and focus the site survey work and likely locations for viewpoint photography and sequential route assessment. A series of site surveys was undertaken to verify the initial desk-based assessments which may only require simple assessment techniques to complete. This may be due to receptors falling outside the ZTV or confirmation of screening from vegetation and / or built form that means there would be no view of the Proposed Development.

1.3.4 Site and field survey activities include:

- Field survey verification of landscape elements within the Site Boundary where potentially significant effects are likely;
- Field survey verification of the ZTV from landscape and visual receptor locations and transport and recreational routes through the LVIA study area;
- Micro-siting of viewpoint locations and recording of panoramic baseline photography and subsequent visual assessment from the assessment viewpoints; and
- Field survey assessment and verification of likely landscape, visual and cumulative effects.

1.3.5 The viewpoint photography and visual assessment surveys would be undertaken in 2022, following strict Covid-19 guidelines.

1.3.6 All site survey work was undertaken in fair weather conditions with good to excellent visibility.

1.4 Integrated Design and Assessment

1.4.1 Design is an integrated and iterative part of the LVIA process. In particular the advice from the following documents, but not limited to, is relevant to the design in terms of the turbine scale, location / layout and where required aviation warning lights:

- SNH, February 2017. *Siting and Designing Wind Farms in the Landscape,* Guidance (Version 3);
- Highland Council, November 2016. *Onshore Wind Energy Supplementary Guidance;*
- SNH, 2019. *Landscape Character Types and Descriptions*; and
- SNH Natural Heritage, September 2020, *General pre-application and scoping advice for onshore wind farms Guidance.*

Potential effects during Construction

1.4.2 A range of potential effects on the landscape and visual resource are likely during the construction of the Proposed Development over a period of up to 18 months. An appraisal of the potential effects helps to define the scope of the LVIA and develop an integrated design and mitigation response which can be embedded into the Proposed Development. The potential effects likely to result from construction are described below.

- **Landscape Effects**:
  - Effects on landscape elements, features and patterns (including, but not limited to soils, landform, ground vegetation, hedgerows / field boundaries, trees / forestry and buildings) as a result of land preparation including site clearance and earthworks.
  - Effects on landscape character and key characteristics, including perceptual characteristics and qualities as a result of construction activities. The construction activities are likely to include the presence of construction staff and machinery, cranes, vehicle movements, contractors' facilities and site access associated with the Proposed Development.
  - Effects on the special landscape qualities and integrity of designated landscapes as a result of the above construction activities.
- **Visual Effects**:
  - Effects on the views and visual amenity experienced by people undertaking various activities at various locations, distances and directions from the proposed land preparation and construction activities. These visual effects could be experienced from one location or sequentially as part of a route through the landscape such as a cycle route or long-distance footpath.
- **Cumulative effects**:
  - Cumulative effects could occur as a result of multiple wind farm construction activities affecting a landscape or visual receptor.

1.4.3 Mitigation and design responses may include a range of design decisions about the location, form, process and timing of construction related infrastructure / operations to mitigate potential landscape and visual effects (avoid, reduce or compensate) as well as reference to a range of best practice behaviours and processes undertaken as part of construction site operation.

Potential Effects during Operation

1.4.4 The potential effects during operation relate principally to the presence of the Proposed Development and its on-going maintenance during the 35-year operational period. This is likely to lead to long-term (reversible) effects on landscape and visual receptors.

1.4.5 Mitigation and design responses may include landscape / architectural design strategies which aim to control the physical appearance of the Proposed Development in terms of its scale, form, colour and number of components. Examples include Landscape Mitigation Plans, choice of project colour scheme, or focus on particular aspects such as a Lighting Strategy to reduce effects on the night-time environment.

1.4.6 Landscape Mitigation Plans illustrate and explain a range of landscape design and management techniques that may be employed to mitigate the effects of Proposed Development by enhancing and controlling its landscape setting and visual appearance. Examples include landscape planting and management plans, habitat management plans and integrated forestry design and management plans, all of which can relate to 'on-site' and off-site' interventions.

Potential Effects during Decommissioning

1.4.7 The Proposed Development would be decommissioned and the land reinstated, leading to a whole or partial reversal of the landscape and visual effects.

1.5 Assessing Landscape Effects

1.5.1 Landscape Effects are defined by the Landscape Institute in GLVIA 3, paragraphs 5.1 and 5.2 as follows:

"An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern … is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. … The area of landscape that should be covered in assessing landscape effects should include the site itself and the full extent of the wider landscape around it which the development may influence in a significant manner."

1.5.2 In accordance with GLVIA 3 the term 'landscape' encompasses areas of 'townscape' and coastal areas of 'seascape'. Areas of landscape are relevant to this assessment and they are described as follows.

Landscape character

1.5.3 GLVIA 3, paragraph 5.4, advises that Landscape Character Assessment should be regarded as the main source for baseline studies and identifies the following factors which combine to create areas of distinct landscape character:

- *"the elements that make up the landscape in the study area including:*
  - *physical influences – geology, soils, landform, drainage and water bodies;*
  - *landcover, including different types of vegetation and patterns and types of tree cover; and*
  - *the influence of human activity, including landuse and management, the character of settlements and buildings, and pattern and type of fields and enclosure.*
  - *The aesthetic and perceptual aspects of the landscape – such as, for example, its scale, complexity, openness, tranquillity or wildness;*
  - *The overall character of the landscape in the study area, including any distinctive Landscape Character Types or Areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each distinctive, usually by identification as key characteristics of the landscape."*

Landscape effects

1.5.4 The potential landscape effects, occurring during the construction, operation and decommissioning periods of the Proposed Development may therefore include, but are not restricted to the following:

- **Changes to landscape elements**: The addition of new elements (wind turbines for example) or the removal of existing elements such as trees, vegetation and buildings and other characteristic elements or valued features of the landscape character;
- **Changes to landscape qualities:** Degradation or erosion of landscape elements and patterns and perceptual characteristics, particularly those that form key characteristic elements of the landscape character or contribute to the landscape value;
- **Changes to landscape character:** Landscape character may be affected through the incremental effect on characteristic elements, landscape patterns and qualities (including perceptual characteristics) and the addition of new features, the magnitude of which is sufficient to alter the overall landscape character within a particular area;

- **Changes to designated landscapes:** Including nationally and locally designated landscapes and Wild Land Areas (WLA) that would affect the special landscape qualities underpinning these areas and their integrity; and
- **Cumulative landscape effects:** Where more than one development of a similar type may lead to a cumulative effect.

1.5.5 Development may have a direct effect on the landscape as well as an indirect effect which would be perceived from the wider landscape, outside the immediate site area and its associated landscape character/ designation. Landscape effects also have to be recognised in terms of natural and man-made processes which can change or alter the landscape over time.

Evaluating landscape sensitivity to change

1.5.6 The assessment of sensitivity takes account of the landscape value and the susceptibility of the receptor to the Proposed Development.

1.5.7 Landscape sensitivity often varies in response to both the type and phase of the development proposed and its location, such that sensitivity needs to be considered on a case by case basis. It should not be confused with 'inherent sensitivity' where areas of the landscape may be referred to as inherently of 'high' or 'low' sensitivity. For example, a National Park may be described as inherently of high sensitivity on account of its designation and value, although it may prove to be less sensitive or susceptible to particular development, and of variable sensitivity across its geographical area. Alternatively, an undesignated landscape may be of high sensitivity to a particular development regardless of the lack of local or national designation.

Value of the Landscape Receptor

1.5.8 The value of a landscape receptor is a reflection of the value that society attaches to that landscape. The assessment of the landscape value is classified as high, medium or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following range of factors:

- **Landscape designations:** A receptor that lies within the boundary of a recognised landscape related planning designation will be of increased value, depending on the proportion of the receptor that is affected and the level of importance of the designation which may be international, national, regional or local. The absence of designation does not however preclude value, as an undesignated landscape receptor may be valued as a resource at a local level;
- **Landscape quality:** The quality of a landscape receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have remained intact. A landscape with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character; and
- **Landscape experience:** The experiential qualities that can be evoked by a landscape receptor can add to its value. These responses relate to a number of factors including cultural associations that may exist in art, literature or history; the recreational value of the landscape, or the iconic status of the landscape in its own right; and its contribution of other values such as nature conservation or archaeology.

Landscape Susceptibility to Change

1.5.9 The susceptibility of a landscape receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the Proposed Development without undue consequences for the maintenance of the baseline situation and / or the achievement of landscape planning policies and strategies. Some landscape receptors are better able to accommodate development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or may not also be special landscape qualities that underpin designated landscapes.

1.5.10 The assessment of the susceptibility of the landscape receptor to change is classified as high, medium or low and the basis for this assessment is made clear using evidence and professional judgement. Indicators of landscape susceptibility to the type of development proposed (wind farm construction, operation and decommissioning) are based on the following criteria:

- **Overall Strength and Robustness:** Collectively the overall characteristics and qualities of a particular landscape result in a strong and robust landscape that is capable of reasonably accommodating the Proposed Development without undue adverse effects on the special landscape qualities (in the case of a designated landscape) or the key characteristics for which an area of landscape character or a particular element it is valued;
- **Landscape Scale and Topography:** The scale and topography are large enough to physically accommodate the development footprint without the requirement of invasive earthworks or drainage. Topographical features such as narrow valleys or more complex and small-scale landforms such as drumlins, incised river valleys / gorges, cliffs or rock outcrops are likely to be more susceptible to this type of development than broad, homogenous topography;
- **Openness** in the landscape may increase susceptibility to change because it can result in wider visibility of the Proposed Development, however open landscape may also be larger in scale and simple, which would decrease susceptibility. Conversely enclosed landscapes can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility;
- **Land Cover Pattern:** Ancient and mature or long-established vegetation such as mature trees, woodland and protected hedgerows are likely to be more susceptible to the Proposed Development, particularly where these elements form part of a valued characteristic landscape pattern or feature. Conversely grassland / or forestry are likely to be less susceptible to wind farm development;
- **Skyline:** Prominent and distinctive skylines and horizons with important landmark features that are identified in the landscape character assessment, are generally considered to be more susceptible to wind farm development in comparison to broad, simple skylines which lack landmark features or contain other infrastructure features;
- **Relationship with other Development and Landmarks:** Contemporary landscapes where there are existing wind energy developments or other forms of development (industry, mineral extraction or electrical grid connections) that already have a characterising influence result in a lower susceptibility to development in comparison to areas characterised by smaller scale, historic development and landmarks (historic villages with dense settlement patterns and associated buildings such as church towers). It should be noted that existing wind energy development is time limited and subject to decommissioning;

- **Rationale:** Some site locations have an obvious visual rationale for the Proposed Development in terms of the available space, access, simplicity and relationship to other similar forms of development. Conversely a site may appear overly constrained and require greater engineering or additional construction activity to accommodate the Proposed Development with lower design quality and few embedded environmental measures;
- **Remoteness, Naturalness, Wildness / Tranquillity**: Notably landscapes that are acknowledged to be particularly scenic, wild or tranquil are generally considered to be more susceptible to development in comparison to ordinary, cultivated or forested / developed landscapes where perceptions of 'wildness' are less tangible. Landscapes which are either remote or appear natural may vary in their susceptibility to development; and
- **Landscape Context and Adjacent Landscapes:** The extent to which the Proposed Development will influence landscape receptors across the study area relates to the associations that exist between the landscape receptor within which the Proposed Development is located and the landscape receptor from which the Proposed Development is being experienced. In some situations, this association will be strong, where the landscapes are directly related. For example, adjacent areas of landscape character may share or 'borrow' a high number of common characteristics. Landscape elements may be linked to or associated with wider landscape patterns such as individual trees forming part of an avenue or pattern of woodland corpses, for example. In other situations, the association between adjacent landscapes will be weak. The context and visual connection to areas of adjacent landscape character or designations has a bearing on the susceptibility to development.

Landscape Sensitivity Rating

1.5.11 An overall sensitivity assessment of the landscape receptor is made by combining the assessment of the value of the landscape character receptor and its susceptibility to change. The evaluation of landscape sensitivity is described as 'High', 'Medium' or 'Low' and is drawn from the consideration of a range of criteria that indicate landscape value and susceptibility. The basis for the assessment is made clear using evidence and professional judgement in the evaluation of sensitivity for each receptor.

1.5.12 Criteria that tend towards higher or lower sensitivity are set out in **Table B.1**.

Table B.1 Landscape Sensitivity to Change

Value / Susceptibility criteria	**Level of value/susceptibility ranging from 'High' to 'Medium' to 'Low'** **High**  **Medium**  **Low**
Value – Landscape Value is determined by consideration a range of indicators/criteria with examples as follows:	
Designation	Designated landscapes/elements with national policy level protection or defined for their natural beauty. Evidence that the landscape/element is valued or used substantially for recreational activity.
	Landscapes without formal designation. Despoiled or degraded landscape with little or no evidence of being valued by the community. Elements that are uncharacteristic such as non-natives or self-seeded vegetation that may need to be cleared.

Value / Susceptibility criteria	Level of value/susceptibility ranging from 'High' to 'Medium' to 'Low' High Low ⟷ Medium ⟷
Quality	Higher quality landscapes/elements with consistent, intact and well-defined, distinctive attributes.	Lower quality and indistinct landscapes/elements or features that detract from its inherent attributes.
Rarity	Rare or unique landscape character types, features or elements.	Widespread or 'common' landscape character types, features or elements.
Aesthetic/ scenic	Aesthetic/scenic or perceptual aspects of designated wildlife, ecological or cultural heritage features that contribute to landscape character.	Limited wildlife, ecological or cultural heritage features, or limited contribution to landscape character.
Perceptual qualities	Landscape with perceptual qualities of wildness, remoteness or tranquillity.	Limited or no evidence that the landscape is used for recreational activity.
Cultural associations	Landscape with strong cultural associations that contributes to scenic quality.	Landscape with few cultural associations.
Susceptibility – Landscape Susceptibility is determined by consideration a range of indicators/criteria with examples as follows:		
Strength and robustness	Fragile landscape vulnerable and lacking the ability to accommodate change.	Robust landscape, able to accommodate change or loss of features without undue adverse effects.
Landscape Scale	A landscape of a suitably large enough scale to accommodate the Proposed Development.	A smaller scale landscape that may require further engineering to accommodate the Proposed Development.
Openness/ Enclosure	An open landscape with limited screening and higher susceptibility to the Proposed Development.	An enclosed landscape with screening and lower susceptibility to the Proposed Development.
Reinstatement	Lower value, non-characteristic landcover and elements capable of rapid reinstatement or replacement.	Higher value, characteristic landcover and elements that cannot be easily reinstated or replaced.
Skyline	Distinctive undeveloped skylines with landmark features.	Developed, nondistinctive skylines.
Association	Weak and indirect association. Other development may be of a smaller scale or historic.	Strong or direct association other similar contemporary developments/landscape character.
Rationale	Strong landscape rationale and opportunity with high degree of design quality and/or environmental measures.	Landscape with numerous environmental and technical constraints and fewer environmental measures.
Perceptual Qualities	Perceptual qualities associated with particular scenic qualities, wildness or tranquillity.	Contemporary, cultivated/settled or developed landscapes are likely to have a lower susceptibility.

Value / Susceptibility criteria	Level of value/susceptibility ranging from 'High' to 'Medium' to 'Low' High Low ⟷ Medium ⟷
Landscape Context	Adjacent landscape character context connected by borrowed character and views. / Host landscape character is separate from surrounding/adjacent landscape character
Sensitivity	Sensitivity drawn from consideration of the above Value and Susceptibility criteria with the final conclusion on the level of Sensitivity ranging from 'High' to 'Medium' to 'Low'.

Landscape Magnitude of Change

1.5.13 The magnitude of change affecting landscape receptors is an expression of the scale of change that would result from the Proposed Development. In assessing the magnitude of change the assessment has focused on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e. as short / medium / long-term and temporary or permanent).

Size or Scale of Change

1.5.14 This criterion relates to the size or scale of change to the landscape that would arise as a result of the Proposed Development, based on the following factors:

- **Landscape Elements**: The degree to which the pattern of elements that makes up the landscape character would be altered by the Proposed Development, through the loss, alteration or addition of elements in the landscape. The magnitude of change would generally be higher if the features that make up the landscape character are extensively removed or altered, and / or if many new components are added to the landscape;
- **Landscape Characteristics**: The extent to which the effect of the Proposed Development change, (physically or perceptually) the key characteristics of the landscape which may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity, complexity or irregularity, the nature of the landscape context, the grain or orientation of the landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the Proposed Development in relation to these key characteristics;
- **Landscape Character / Designation**: The degree to which landscape character receptors would be changed by the addition of the Proposed Development. If the Proposed Development is located in a landscape receptor that is already affected by other similar development, this may reduce the magnitude of change if there is a high level of integration and the developments form a unified and cohesive feature in the landscape. In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation.

  All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread affecting whole landscape character areas and their overall integrity. Developmental change may be time limited or permanent; and

- **Distance**: The size and scale of change is also strongly influenced by the proximity of the Proposed Development to the receptor and the extent to which the development can be seen as a characterising influence on the landscape. Consequently, the scale or magnitude of change is likely to be lower in respect of landscape receptors that are distant from the Proposed Development and / or screened by intervening landform, vegetation and built form to the extent that the scale of their influence on landscape receptors is small or limited. Conversely, landscapes closest to the Proposed Development are likely to be most affected. Host landscapes (where the Proposed Development is located within a 'host' landscape character unit) would be directly affected whilst adjacent areas of landscape character would be indirectly affected.

Geographical Extent

1.5.15 Landscape effects are described in terms of the geographical extent or physical area that would be affected (described as a linear or area measurement). This should not be confused with the scale of the development or its physical footprint. The manner in which the geographical extent of the landscape effect is described for different landscape receptors is explained as follows:

- **Landscape Elements**: The geographical extent of landscape elements may be objectively measured in terms of numbers, area or linear measurement. For example, the number of trees, area of woodland / or length of hedgerow affected may be recorded;
- **Landscape Character / Characteristics**: The extent of the effects on landscape character will vary depending on the specific nature of the Proposed Development. This is not simply an expression of visibility or the extent of the ZTV. It is a specific assessment of the extent of landscape character that would be changed by the Proposed Development in terms of its character, key characteristics and elements; and
- **Landscape Designations and Wild land**: In the case of a designated landscape, this refers to the extent the special landscape qualities of the designation, or wild land qualities, are affected and whether this can be defined in terms of area or linear measurements, or subjectively (with the support of panel and / or peer review) and whether the integrity of the designation is affected.

Duration and Reversibility

1.5.16 The duration and reversibility of landscape effects is based on the period over which the Proposed Development is likely to exist (during construction and operation) and the extent to which it would be removed (during decommissioning) and the effects reversed at the end of that period. Long-term, medium-term and short-term landscape effects are defined as follows:

- Permanent Development: No decommissioning, removal or reinstatement is planned.
- Temporary Development: This includes time limited development, such as a longer period of operation where decommissioning for example forms part of the Proposed Development or temporary phases of the development such as construction or decommissioning works:
  - Long-term – more than 10 years – essentially assessed as though 'permanent';
  - Medium-term – 6 to 10 years; and
  - Short-term – 1 to 5 years.

1.5.17 Reversibility is a separate, but linked consideration concerning the prospects and practicality of a particular effect being reversed. Some forms of development, such as housing can be considered as permanent, whereas other forms of development such as wind farms can be considered as reversible because they have a limited operational life and after their removal the land would be restored. Mineral workings for example may be partially reversible with the landscape restored, although not completed to the same state as the original. In the case of the Proposed Development, the application is for a 40 year operation period, beyond which the project would be decommissioned or a new application submitted, and many of the effects would be reversed.

Landscape Magnitude of Change Rating

1.5.18 The 'magnitude' or 'degree of change' resulting from the Proposed Development is described as 'High', 'High – Medium', 'Medium', 'Medium – Low', 'Low', 'Low – Very Low', 'Very Low' or 'Zero'. In assessing the magnitude of change the assessment has focused on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e. as short / medium / long-term and temporary or permanent). The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement.

1.5.19 The levels of magnitude of change that can occur are defined in **Table B.2**.

Table B.2 Landscape Magnitude of change Ratings

Magnitude of landscape change	Examples of Landscape Magnitude
High	Size / Scale: A large-scale change and major loss of key landscape elements / characteristics or the addition of large scale or numerous new and uncharacteristic features or elements that would affect the landscape character and the special landscape qualities of a landscape designation. Directly affecting a host landscape receptor or indirectly affecting a nearby receptor. Geographical extent: The size or scale of change would typically, but not always affect a large geographical extent or area and may be close to the Proposed Development.
High - Medium	Intermediate rating with combination of criteria from high or medium magnitude.
Medium	Size / Scale: A medium scale change and moderate loss of some key landscape elements / characteristics or the addition of some new medium scale uncharacteristic features or elements that could partially affect the landscape character and the special landscape qualities of a landscape designation. Directly affecting a host landscape receptor or indirectly affecting a nearby receptor. Geographical extent: The size or scale of landscape change would typically, but not always affect a more localised geographical extent at an intermediate distance from the Proposed Development.
Medium - Low	Intermediate rating with combination of criteria from medium or low magnitude.
Low	Size / Scale: A small-scale change and minor loss of a few landscape elements / non key characteristics, or the addition of some new small-scale features or elements of limited characterising influence on landscape character / designations.

Magnitude of landscape change	Examples of Landscape Magnitude
	Geographical extent: There may be a small partial change in landscape character, typically, but not always affecting a localised geographical extent at some distance from the Proposed Development.
Low - Very Low	Intermediate rating with combination of criteria from low or very low magnitude.
Very Low to Zero	Size / Scale: A very small-scale change that may include the loss or addition of some landscape elements of limited characterising influence. The landscape characteristics and character would be unaffected. Geographical extent: Typically affecting a very small geographical extent at greater distance from the Proposed Development.

Evaluating landscape effects and significance

1.5.20 The level of landscape effect is evaluated through the combination of landscape sensitivity and magnitude of change. Once the level of effect has been assessed, and the nature of the effect determined (whether this is direct / indirect; its duration, whether this is temporary / permanent; and whether it is beneficial / neutral / adverse or cumulative) a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix illustrated in **Table 6.1.5** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the Proposed Development and their conclusion, will be presented in a comprehensive, clear and transparent manner.

Significant Landscape Effects

1.5.21 A significant effect would occur where the combination of the variables results in the Proposed Development having a defining effect on the landscape receptor, or where changes of a lower magnitude affect a landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area of landscape character, affecting landscape elements, characteristics and / or perceptual aspects that are key to a nationally valued landscape are likely to be significant as described in GLVIA 3 paragraph 5.56.

Non-Significant Landscape Effects

1.5.22 A non-significant effect would occur where the effect of the Proposed Development is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly affect the special landscape quality or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or affecting lower value receptors are unlikely to be significant as described in GLVIA 3 paragraph 5.56.

1.6 Assessing Visual Effects

1.6.1 Visual Effects are concerned wholly with the effect of the development on views, and the general visual amenity and are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows:

"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern … is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

1.6.2 Visual effects are identified for different receptors (people) who would experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- Visual effect: a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view; and
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

1.6.3 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of each visual receptor (or range of sensitivities for receptor groups) and the magnitude of change that would be brought about by the construction, operation and decommissioning of the Proposed Development.

Zone of Theoretical Visibility (ZTV)

1.6.4 Plans mapping the Zone of Theoretical Visibility (ZTV) are used to analyse the extent of theoretical visibility of development or part of a development, across the LVIA Study Area and to assist with viewpoint selection. The ZTV does not however, take account of the screening effects of buildings, localised landform and vegetation, unless specifically noted (see individual figures). As a result, there may be roads, tracks and footpaths within the study area which, although shown as falling within the ZTV, are screened or filtered by built form and vegetation, which would otherwise preclude visibility.

1.6.5 The ZTVs provide a starting point in the assessment process and accordingly tend towards giving a 'worst case' or greatest calculation of the theoretical visibility.

Viewpoint Analysis

1.6.6 Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the LVIA Study Area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect would occur. By considering the viewpoints in order of distance it is possible to define a threshold or outer geographical limit, beyond which it would be reasonable to assume that significant effects would be unlikely.

1.6.7 The assessment involves visiting the viewpoint location and viewing wirelines and photomontages prepared for each viewpoint location. The fieldwork is conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance.

1.6.8 Viewpoint analysis prepared for each viewpoint is presented as supporting evidence in an appendix to the LVIA (**Technical Appendix 6.2**). A summary table of the findings is also

provided in order of distance from the development site. This summary table assists in defining the direction, elevation, geographical spread and nature of the potential visual effects and identifies areas where significant effects are likely to occur. This approach seeks to provide clarity and confidence to consultees and decision makers by allowing the detailed judgements on the magnitude of visual change to be more readily scrutinised and understood.

Evaluating Visual Sensitivity to Change

1.6.9 In accordance with paragraphs 6.31-6.37 of GLVIA 3, the sensitivity of visual receptors is determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the Proposed Development on the view and visual amenity.

Value of the view

1.6.10 The value of a view or series of views reflects the recognition and importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view is classified as high, medium or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following criteria:

- **Formal recognition**: The value of views can be formally recognised through their identification on OS or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view would be increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape; and
- **Informal recognition**: Views that are well-known at a local level and / or have particular scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature and this can also add to their value. A viewpoint that is visited and appreciated by a large number of people would generally have greater importance than one gained by very few people.

Susceptibility to Change

1.6.11 Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the Proposed Development. A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium or low and based on the following criteria:

- **Nature of the viewer**: The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher sensitivity. Viewers travelling in cars or on trains would tend to have a lower sensitivity as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less sensitive to changes in views.

- **Experience of the viewer**: The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the Proposed Development may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position and over a long or short duration. For example, if the principal outlook from a settlement is aligned directly towards the Proposed Development, the experience of the visual receptor would be altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at high speed. The visual amenity experienced by the viewer varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the Proposed Development.

Visual Sensitivity Rating

1.6.12 An overall level of sensitivity is applied for each visual receptor or view, classified as 'High', 'Medium' or 'Low' by combining individual assessments of the value of the view and the susceptibility of the visual receptor to change. Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, is assessed in terms of their sensitivity. The basis for the assessments is made clear using evidence and professional judgement in the evaluation of each receptor. Criteria that tend towards higher or lower sensitivity are set out in **Table B.3**.

Table B.3 Visual sensitivity to change

Value/ Susceptibility criteria	**Level of value / susceptibility ranging from 'High' to 'Medium' to 'Low'** **High** ⟷ **Medium** ⟷ **Low**	
Value – is determined by consideration a range of indicators/criteria with examples as follows:		
Map/tourist information	Specific viewpoint identified in OS maps and/or tourist information and signage.	Viewpoint not identified in OS maps or tourist information and signage.
Facilities	Facilities provided at viewpoint to aid the enjoyment of the view.	No facilities provided at viewpoint to aid enjoyment of the view.
Planning recognition	View afforded protection in planning policy.	View is not afforded protection in planning policy.
Landscape value	View is within or overlooks a designated landscape, which implies a higher value to the visible landscape.	View is not within, nor does it overlook, a designated landscape.
Recognition	View has informal recognition and well-known at a local level, as having particular scenic qualities.	View has no informal recognition and is not known as having particular scenic qualities.
Art/Literature	View or viewpoint is recognised through references in art or literature.	View or viewpoint is not recognised in references in art or literature.
Scenic Quality	View has high scenic qualities relating to the content and composition of the visible landscape.	View has low scenic qualities relating to the content and composition of the visible landscape.

Value/ Susceptibility criteria	Level of value / susceptibility ranging from 'High' to 'Medium' to 'Low' High ⟷ Medium ⟷ Low
Susceptibility – is determined by consideration a range of indicators/criteria with examples as follows:	
Activity of the viewer	Viewer who is likely or liable to be influenced by the Proposed Development such as residents, walkers, or tourists, whose main attention and interest may be on their surroundings.
Nature of the View	Residents that gain static, long-term views of the development in their principal outlook.
Direction/ Field of View	A view that is focused in a specific directional vista, with notable features of interest in a particular part of the view.
Visual amenity	Viewers are focused on the experience of a high level of visual amenity at the location due to its overall pleasantness as an attractive visual setting or backdrop to activities.
Sensitivity	Sensitivity drawn from consideration of the above Value and Susceptibility criteria with the final conclusion on the level of Sensitivity ranging from 'High' to 'Medium' to 'Low'.

Visual Magnitude of Change

1.6.13 The visual magnitude of change is an expression of the scale of change that would result from the visibility of the Proposed Development. In assessing the magnitude of change the assessment has focused on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e. as short / medium / long-term and temporary / permanent).

Size or Scale of Change

1.6.14 An assessment is made of the size or scale of change in the view that is likely to be experienced as a result of the Proposed Development, based on the following criteria:

- **Distance**: The distance between the visual receptor / viewpoint and the Proposed Development. Generally, the greater the distance, the lower the magnitude of change, as the Proposed Development would constitute a smaller-scale component of the view due to the effects of perspective.
- **Size**: The amount and size of the Proposed Development that would be seen. Visibility may range from small or partial to whole visibility of the Proposed Development. Generally, the larger and greater number of elements (wind turbines and access tracks) of the Proposed Development that appear in the view, the higher the magnitude of change.

  This is also related to the degree to which development may be wholly or partly screened by landform, vegetation (seasonal) and / or built form. Conversely open

views are likely to reveal more of a development, particularly where this is a key characteristic of the landscape.

- **Scale**: The scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition. The scale of the Proposed Development may appear larger or smaller relative to the scale of the receiving landscape.
- **Field of View** The vertical / horizontal field of view (FoV) and the proportion of view that is affected by the Proposed Development. Generally, the more of the proportion of a view that is affected, the higher the magnitude of change would be. If the Proposed Development extends across the whole of the view, the magnitude of change would generally be higher as the full view would be affected. Conversely, if the Proposed Development extends over a narrow part of an open view, the magnitude of change is likely to be reduced as the Proposed Development would not affect the whole view or outlook. This can in part be described objectively by reference to the horizontal / vertical FoV affected, relative to the extent and proportion of the available view.
- **Contrast**: The character and context within which the Proposed Development would be seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of change.
- **Consistency of image**: The consistency of image of the Proposed Development in relation to other developments. The magnitude of change for the Proposed Development is likely to be lower if it appears broadly similar to other developments in the landscape in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- **Skyline / Background**: Whether the Proposed Development would be viewed against the skyline or a background landscape may affect the level of contrast and magnitude. For example, skyline developments may appear more noticeable, particularly where they affect open and undeveloped horizons. Conversely, development may also appear more noticeable when viewed against a darker background landscape, such as forestry. In these cases, the magnitude of change would tend to be higher.

  If the Proposed Development adds to an already developed skyline the magnitude of change would tend to be lower.
- **Number**: Generally, the greater the number of separate development components seen simultaneously or sequentially, the higher the magnitude of change and this may lead to whole project effects (for example the visual effect of the turbines and the substation). Further cumulative effects would occur in the case of separate, existing developments and their spatial relationship to each other would affect the magnitude of change. For example, development that appears as an extension to an existing development would tend to result in a lower magnitude of change than a separate, new development.
- **Nature of Visibility**: The nature of visibility is a further factor for consideration. The Proposed Development may be subject to various phases of development change and the manner in which the development may be viewed could be intermittent or continuous and / or seasonally, due to periodic management or leaf fall.

Geographical Extent

1.6.15 The geographic extent over which the visual effects would be experienced is also assessed. This is distinct from the size or scale of effect and is described in terms of the physical area or location over which it would be experienced (described as a linear or area measurement). The extent of the effects would vary according to the specific nature of the Proposed Development and is principally assessed through ZTV, field survey and viewpoint analysis of the extent of visibility likely to be experienced by visual receptors. The geographical extent of visual effects is described as per the following examples:

- The geographical extent can be described as an area measurement or proportion of the total receptor affected. For example, effects on people within a particular area such as a golf course or area of common land can be illustrated via a 'representative viewpoint' that represents a similar visual effect, likely to be experienced by larger numbers of people within that area. The geographical extent of that visual effect can be expressed as approximately '5 hectares' or '10%' of the common land or a golf course area;
- The geographical extent can be described as a linear measurement (metres or kilometres) according to the length of route affected. For example, effects on people travelling on a route through the landscape such as a road or footpath can be illustrated via a 'representative viewpoint' that represents a similar visual effect, likely to be experienced by larger numbers of people along that route. The geographical extent of that visual effect can be expressed as approximately '2km' or '10%' of the total length of the route; and
- The geographical extent of a visual effect experienced from a specific viewpoint may be limited to that location alone. (An example of a 'specific viewpoint' is a public viewpoint recommended in tourist literature such as a well visited hill summit. An example of an 'illustrative viewpoint' is a particular location within a built up or well vegetated area where an uncharacteristically open view exists).

Duration and Reversibility

1.6.16 The duration or time period over which a visual effect is likely to occur is judged on a scale of 'short', 'medium' or 'long' term and is assessed for the Proposed Development as per the method set out in paragraph 1.5.14.

1.6.17 Reversibility is a separate, but linked consideration, also assessed for the Proposed Development as per the method set out in paragraph 1.5.15.

Visual Magnitude of Change Rating

1.6.18 The 'magnitude' or 'degree of change' resulting from the Proposed Development is described as 'High', 'High – Medium', 'Medium', 'Medium – Low', 'Low', 'Low – Very Low', 'Very Low' or 'Zero'. In assessing the magnitude of change the assessment has focused on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e. as short / medium / long-term and temporary / permanent). The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement and some examples of the levels of magnitude of change that can occur on views are defined in **Table B.4**.

Table B.4 Visual Magnitude of change

Magnitude of landscape change	Examples of Visual Magnitude
High	Size and Scale: A very large - large and dominant change to the view. Number: Involving the loss/addition of a large number of features / elements. Distance: Typically appearing closer to the viewer in the fore to mid-ground. FoV: Affecting a large vertical and wide horizontal FoV. Nature of Visibility: Multiple phase development, continuously and sequentially visible. Contrast: Strong degree of contrast with surroundings, little / no screening. Skyline: Visible on the skyline as a new feature. Consistency of Image: Contrasting with other existing developments, lacking in visual rationale. Typically experienced from representative viewpoints illustrating a visual effect likely to be experienced by larger numbers of people, relative to the activity, affecting a large area or length / proportion of route. May also be experienced from a specific viewpoint.
High - Medium	Intermediate rating with combination of criteria from high or medium magnitude of change category.
Medium	Size and Scale: A medium and prominent change to the view. Number: Involving the loss/addition of a number of features / elements. Distance: Typically appearing in the middle ground. FoV: Affecting a medium vertical and a medium horizontal FoV. Nature of Visibility: Multiple phase development, intermittently and sequentially visible. Contrast: Contrast with surroundings and may benefit from some screening. Skyline: Visible on the skyline along with other features. Consistency of Image: Different from other existing developments, some visual rationale. Typically experienced from representative viewpoints illustrating a visual effect likely to be experienced by a medium number of people, relative to the activity, affecting a medium area or length / proportion of route. May also be experienced from a specific viewpoint.
Medium - Low	Intermediate rating with combination of criteria from medium or low magnitude of change category.
Low	Size and Scale: A small / noticeable change, easily missed by the casual observer. Number: Involving the loss/addition of a small number of features / elements. Distance: Typically appearing in the background. FoV: Affecting a small vertical and a narrow horizontal FoV. Nature of Visibility: Simple, single development, intermittently and infrequently visible. Contrast: Some parity / 'fits' with surroundings and some screening. Skyline: Partly visible on a developed skyline or not visible on the skyline. Consistency of Image: Similar from other existing developments with visual rationale, appearing reasonably well accommodated within its surroundings. Typically experienced from illustrative viewpoints likely to be experienced by low numbers of people, relative to the activity, affecting a smaller area or length / proportion of route. May also be experienced from a specific viewpoint.

Magnitude of landscape change	Examples of Visual Magnitude
Low – Very Low	Intermediate rating with combination of criteria from low or very low magnitude of change category.
Very Low to Zero	Size and Scale: A small or negligible change, need to 'look for it'. Number: Involving the loss/addition of a small number of features / elements. Distance: Typically appearing in the far distance. FoV: Affecting a small vertical and a very narrow horizontal FoV. Nature of Visibility: Simple, single development, intermittently and infrequently visible. Contrast: Blends with surroundings and / or is well screened. Skyline: Partly visible on a developed skyline or not visible on the skyline. Consistency of Image: Similar from other existing developments with strong visual rationale, appearing well accommodated within its surroundings. Typically experienced from illustrative viewpoints likely to be experienced by low numbers of people, relative to the activity, affecting a smaller area or length / proportion of route. May also be experienced from a specific viewpoint.

Evaluating visual effects and significance

1.6.19 The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of change. Once the level of effect has been assessed, and the nature of the effect determined (whether this is direct / indirect; its duration, whether this is temporary / permanent; and whether it is beneficial / neutral / adverse or cumulative) a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix illustrated in **Table 6.1.5** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the Proposed Development and their conclusion, is presented in a comprehensive, clear and transparent manner.

Significant Visual Effects

1.6.20 A significant effect is more likely to occur where a combination of the variables results in the Proposed Development having a defining effect on the view or visual amenity or where changes affect a visual receptor that is of high sensitivity as described in GLVIA 3 paragraph 6.44.

Non-Significant Visual Effects

1.6.21 A non-significant effect is more likely to occur where a combination of the variables results in the Proposed Development having a non-defining effect on the view or visual amenity or where changes affect a visual receptor that is of low sensitivity as described in GLVIA 3 paragraph 6.44.

Weather conditions

1.6.22 The assessment of visual effects is undertaken in clear weather with good to excellent visibility. This means that the viewpoint assessment represents a fair assessment of the likely visual effects.

1.7 Assessing Cumulative Landscape and Visual Effects

1.7.1 The assessment of cumulative effects is essentially the same as for the main assessment of the 'solus' or primary landscape and visual effects, in that the level of landscape and visual effect is determined by assessing the sensitivity of the landscape or visual receptor and the magnitude of change. Cumulative assessment, however, considers the magnitude of change posed by multiple developments.

1.7.2 A cumulative landscape or visual effect simply means that more than one type of development is present or visible within the landscape. Other forms of existing development and land-use such as woodland and forestry, patterns of agriculture, built form, and settlements already have a cumulative effect on the existing landscape that is already accepted or taken for granted. These features often contribute strongly to the existing character, forming a positive or adverse component of the local landscape. Landscapes, however will have a finite capacity for cumulative development, beyond which further new development would result in landscape character change and could result in the creation of a 'wind farm landscape' where wind farms have become the dominant characteristic.

1.7.3 Detailed guidance on the cumulative assessment of wind farm development is provided in the SNH document '*Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments*' (2012) and '*Guidance: Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments'* (2021). This assessment distinguishes between 'additional' cumulative effects that would result from adding the Proposed Development to other cumulative wind farm development and 'combined' cumulative effects that assess the total cumulative effect of the Proposed Development and other cumulative wind farm development. In the latter case a significant cumulative effect may result from the Proposed Development or one of more other existing, under-construction or consented wind farms, or other wind farm applications. In those cases, the main contributing wind farm(s) is identified in the assessment.

1.7.4 Types of cumulative effect are defined as follows:

- Cumulative Landscape Effects: Where more than one wind development may have an effect on a landscape designation or particular area of landscape character;
- Cumulative Visual Effects: the cumulative or incremental visibility of similar types of development that may combine to have a cumulative visual effect. These can be further defined as follows:
  - Simultaneous or combined: where two or more developments may be viewed from a single fixed viewpoint simultaneously, within the viewer's field of view and without requiring them to turn their head[2];
  - Successive or repetitive: where two or more developments may be viewed from a single viewpoint successively as the viewer turns their head or swivels through 360°; and
  - Sequential: where a number of developments may be viewed sequentially or repeatedly at increased frequency, from a range of locations when travelling along a route within the LVIA Study Area.

1.7.5 The SNH document '*Siting and Designing Wind farms in the Landscape' (Version 3a)* explains that the development of multiple wind farms within a particular area may create different types of cumulative effect, that can be described as follows:

[2] Note: A person's field of view is variable but is approximately 90° when facing in one direction.

"The wind farms are seen as separate isolated features within the landscape character type, too infrequent and of insufficient significance to be perceived as a characteristic of the area;

The wind farms are seen as a key characteristic of the landscape, but not of sufficient dominance to be a defining characteristic of the area; [a landscape with wind farms] and

The wind farms appear as a dominant characteristic of the area, seeming to define the character type as a 'wind farm landscape character type."

1.7.6 Wind farm development that results in the creation of a '*wind farm landscape*' as opposed to a '*landscape with wind farms'* or '*landscape with occasional wind farms*' is likely to be assessed as significant. Equally the 'additional effect' of wind farm development, adding to a scenario where there are already a number of other existing or consented wind farms, may be less than the effect of the Proposed Development either on a 'solus' or primary basis or in an area where there are few or no wind farms existing. This is because wind farm development has already been established as a characterising influence and the additional effect of further development may or may not alter this.

1.7.7 Whilst the CLVIA considers other wind farm development, it should not be considered as a substitute for individual LVIA assessment in respect of each of the other cumulative developments included in the CLVIA.

Defining the Cumulative Study Area

1.7.8 The cumulative study area is the same as the LVIA Study Area as illustrated in **Figure 6.1**. The cumulative assessment considers the effects of other existing, under-construction, consented and application wind energy sites on the landscape and visual receptors within the LVIA Study Area. In determining which wind energy developments should be included in the CLVIA the assessors may draw on the advice from consultees and other wind energy development within a wider search area (up to 60km radius from the proposed turbines).

1.7.9 Those developments at pre-planning or scoping stage are excluded in accordance with SNH guidance unless there is a justified / exceptional circumstance for their inclusion in the assessment. However, scoping stage wind farms within 10km of the Proposed Development have been included in the wirelines.

Predicting Cumulative Landscape Effects

1.7.10 The assessment considers the extent to which the Proposed Development, in combination with others, may change landscape character through either an 'additional' or 'in combination' effect on characteristic elements, landscape characteristics and quality of the baseline landscape character. Identified cumulative landscape effects are described in relation to each individual Landscape Character Type/Area and for any designated landscape areas assessed within the LVIA Study Area.

Predicting Cumulative Visual Effects

1.7.11 The assessment of cumulative visual effects involves reference to the cumulative visibility ZTV maps and the cumulative viewpoint analysis. The cumulative visibility of other existing and consented wind energy developments and applications is established in the first instance using the computer programme (Resoft Wind Farm© software) to identify areas where wind energy developments are theoretically visible. Cumulative visibility maps are analysed to identify the visual receptor locations and routes where cumulative

visual effects on the landscape and people may occur as a result of the Proposed Development.

1.7.12 With potential receptor locations identified, cumulative effects on individual receptor groups are then explored through viewpoint analysis, which involves site visits informed by wireline illustrations that include other wind energy developments. The computer programme itself can also be used to 'drive' particular routes to assess the visibility of different wind energy developments and inform the assessment of sequential cumulative effects that may occur along a route or journey and compared to actual visibility experienced along a route on site.

Evaluation of Cumulative Landscape and Visual Effects

1.7.13 The evaluation of cumulative effects is assisted by the matrix illustrated in **Table 6.1.5,** which is used to guide the assessment.

1.7.14 The cumulative assessment has been prepared to ensure that, as well as the 'solus' or primary effect of the Proposed Development (LVIA) the 'additional' cumulative effects and the 'combined' cumulative effect (CLVIA) is also reported to account for two cumulative Scenarios as follows:

- **Proposed development:** Assessed on an individual basis (the LVIA). This part of the assessment may take account of other existing forms of wind farm development that may be present in the landscape, whilst recognising that their influence on landscape character is likely to be time limited. It does not consider the additional or combined cumulative effects and only reports of the effect of the Proposed Development alone;
- **Scenario 1: Existing + Consented + the Proposed Development**: The additional and combined cumulative effects of the existing and consented wind energy developments with the Proposed Development are assessed; and
- **Scenario 2: Existing + Consented + Applications + the Proposed Development**: The additional and combined cumulative effects of the existing and consented wind energy developments and applications, with the Proposed Development are assessed.

1.7.15 In addition, the cumulative assessment takes account of the timescales, as far as practicable, for the operation of the existing and consented developments.

1.7.16 Due to the numbers of other developments involved, the overall cumulative effects may be greater than for the primary effect or additional effect for the Proposed Development assessed in the main LVIA. The resulting level of cumulative effect may remain at the same level of effect or increase to a higher level of effect. The point at which these effects become significant or not significant in landscape and visual terms is still a matter for professional judgement, although four scenarios or combinations of cumulative effect, taking account of other wind energy development can occur as follows:

- A significant effect from the Proposed Development is predicted in addition or combination with another significant effect attributed to other development(s). The effect is still termed significant and cumulative, but is a greater level of effect than for either development individually;
- A significant effect from the Proposed Development is predicted in addition or combination with another non-significant effect attributed to other development(s). The effect is still termed significant and cumulative, but is attributed to the Proposed Development and is a greater level of effect than for either development individually;
- A non-significant effect from the Proposed Development is predicted in addition or combination with another significant effect attributed to other development(s). The

effect is still termed significant and cumulative, but is attributed to the other wind energy development(s) and is a greater level of effect than for either development individually; and

- A non-significant effect from the Proposed Development is predicted in addition or combination with another non-significant effect attributed to other development(s). The effect is still termed cumulative and is a greater level of effect than for either development individually; the combined effect however, may or may not be significant.

1.7.17 The nature of a cumulative effect may also be described as direct / indirect, temporary / permanent, or beneficial / adverse. The probability of a cumulative effect occurring may also be described (certain, likely or uncertain / unknown) according to whether the developments in question are existing / under construction, consented or at the application stage.

1.8 Evaluation of Significance and Nature of Effect

1.8.1 The matrix presented in **Table 6.1.5** is used as a guide to illustrate the LVIA process. In line with the emphasis placed in GLVIA 3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.

1.8.2 The landscape and visual assessment unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible cross references will be made to objective evidence, baseline figures and / or to photomontage visualisations to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach. Importantly each effect results from its own unique set of circumstances and have been assessed on a case by case basis. The matrix should therefore be considered as a guide and any deviation from this guide will be clearly explained in the assessment.

1.8.3 In accordance with the relevant EIA Regulations it is important to determine whether the effects, assessed as a result of the Proposed Development, are likely to be significant. Significant landscape and visual effects will be highlighted in bold in the text and in most cases, relate to all those effects that result in a '**Major**' or a '**Major / Moderate**' effect as indicated in **Table 6.1.5**.

1.8.4 In some circumstances, '**Moderate**' levels of effect also have the potential, subject to the assessor's opinion, to be considered as either significant or not significant and these exceptions are also highlighted in bold and explained as part of the assessment, where they occur.

1.8.5 White or un-shaded boxes in **Table B.5** indicate a non-significant effect. In those instances where there would be no effect, the magnitude has been recorded as 'Zero' and the level of effect as 'None' or 'No View'.

Table B.5 Evaluation of Landscape and Visual Effects

Magnitude of Change	Landscapes and Visual Sensitivity			
	High	**Medium**	**Low**	**Very Low**
High	**Major**	**Major / Moderate**	*Moderate*	Not used
High - Medium	**Major**	**Major / Moderate**	*Moderate*	
Medium	**Major / Moderate**	*Moderate*	Minor	
Medium - Low	**Major / Moderate**	*Moderate*	Minor	
Low	*Moderate*	Minor	Negligible	
Low – Very Low	*Moderate*	Negligible	Negligible	
Very Low	Minor	Negligible	Negligible	
Zero	None / No View			

Type or Nature of Effect

1.8.6 In accordance with the EIA Regulations the type or nature of effect is also described in terms of whether it is direct or indirect; its duration (temporary / permanent or reversible) cumulative; and whether the effect is positive, neutral or negative. Transboundary effects are not relevant to this assessment.

Direct and indirect effects

1.8.7 GLVIA, paragraph 5.2 notes that landscape may be directly and indirectly affected by development and defines indirect effects as "*Effects that result indirectly from the proposed project as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in rime from the source of the effects*".

1.8.8 Direct landscape effects relate to the host landscape and concern both physical and perceptual effects on the receptor. Indirect landscape effects may also affect the host landscape as well as other landscapes, often separated by distance from the proposed development, as a consequence of views that affect the perceptual aspects of their character and key characteristics.

1.8.9 Visual effects are generally all considered as direct effects. An indirect visual effect may however be used to define a visual effect on a view that is not in the direction of the main view of the viewer as described by the following examples:

- Road users generally face the road directly ahead in the direction of travel and visual effects affecting those views may be described as direct effects. Where the visual effect is experienced in views oblique to the direction of travel they may be described as indirect; and
- Designed landscapes and vistas / viewpoints may be orientated in a particular direction and visual effects affecting those views may be described as direct effects. Where the visual effect is experienced in views oblique to the direction of the designed or main / primary view they may be described as indirect.

1.8.10 Secondary effects (or effects subsequent to an initial effect) are covered in this assessment by indirect effects.

Beneficial and adverse effects

1.8.11 Wind farms give rise to a wide range of opinions, from strongly adverse to strongly beneficial. However, LVIA is not an assessment of public opinion, although a precautionary approach has been taken, which assumes that the nature of the effects would be adverse or neutral unless otherwise stated.

1.8.12 Guidance provided by the in GLVIA 3 on the nature of effect (i.e. beneficial or adverse) states that *'in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity'*, but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.

1.8.13 In relation to many forms of development, the LVIA will identify 'beneficial' and 'adverse' effects by assessing these under the term 'Nature of Effect'. The landscape and visual effects of large-scale infrastructure are difficult to categorise in either of these brackets as, unlike other disciplines, there are no definitive criteria by which the effects can be measured as being categorically 'beneficial' or 'adverse'. In some disciplines, such as noise or ecology, it is possible to quantify the effect in numeric terms, by objectively identifying or quantifying the proportion of a receptor that is affected and assessing the nature of that effect in justifiable terms. However, this is not the case in relation to landscape and visual effects where the approach combines quantitative and qualitative assessment.

1.8.14 As a starting point, unless stated otherwise, the effects considered in the assessment will be considered to be adverse. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment where relevant, based on the following definitions:

- Beneficial effects contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial attributes. The Proposed Development contributes to the landscape by virtue of good design or the introduction of new landscape planting. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components;
- Neutral effects occur where the Proposed Development fits with the existing landscape character or visual amenity. The Proposed Development neither contributes to or detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, or where the effects are so limited that the change is hardly noticeable (very low magnitude). A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation; and
- Adverse effects are those that detract from the landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its characterisation.

Probability of Effect

1.8.15 The probability of cumulative effects is variable. Those effects related to existing wind energy development and those under construction are considered as certain; effects related to development with planning consent are considered as likely. Wind energy development sites for which there is a submitted planning application are considered as uncertain with an even greater level of uncertainty attached to pre-planning application sites.

1.9 Residential Visual Amenity Assessment

1.9.1 Residential amenity is a planning matter that involves a wide number of effects (such as noise and shadow flicker) and benefits, of which residential visual amenity is just one component. The Residential Visual Amenity Assessment (RVAA) is limited to the consideration of visual effects on residential amenity and the methodology accords with the advice in GLVIA 3, the Landscape Institute's *Residential Visual Amenity Assessment: Technical Guidance Note*, 2019.

1.9.2 Planning law contains a widely understood principle that the outlook or view from a private property is a private interest and not therefore protected by the UK planning system. However, the planning system also recognises situations where the effects on residential visual amenity are considered as a matter of public interest. This matter has been examined at a number of public inquiries in both Scotland and England where the key determining issue was not the identification of significant effects on views, but whether the proposed turbines would have an effect on the residential visual amenity through an overbearing effect and/or result in unsatisfactory living conditions, leading to a property being regarded, objectively, as an unattractive (as opposed to a less attractive) place in which to live.

1.9.3 As a consequence, the visual assessment methodology provides for a much more detailed assessment of the closest residential properties. This allows the assessor and consequently the determining authority to make a judgement as to whether the residents at these properties would be likely to sustain unsatisfactory living conditions which it would not be in the public interest to create. Reviews of decisions demonstrate that significant visual effects or changes to the views available from a residential property and its curtilage are not the decisive consideration, rather it is the residential amenity and in this case residential *visual* amenity that is determinate.

1.9.4 The methodology for assessing the visual effects on views from residential properties is therefore slightly different from the assessment of other visual receptors and allows for two stages of assessment as follows:

- Stage 1: Undertake a visual assessment to identify any significant effects; and
- Stage 2: Undertake a Residential Visual Amenity Assessment (RVAA).

1.9.5 A residential property, for the purposes of environmental impact assessment, should be one that was designed and built/converted for that purpose and currently (at the time of the assessment) remains in a habitable condition (is of a safe construction, is wind and watertight with appropriate vehicle access, and has services such as drinking water, sanitation, and a power supply). Other buildings such as barns/outbuildings, garages, huts and derelict properties should generally be excluded from the assessment, unless they form part of the curtilage of an existing residence.

1.9.6 The assessment of residential properties or clusters of residential properties has been limited to those which appear on the Ordnance Survey 1:25,000 scale map and any known, recent 'new-builds'. Planning permissions and conversions have not been

included. Whilst most of the properties can be viewed at close range from public roads and footpaths, or have otherwise been visited, some of these properties are accessed via private or gated roads and due to these access limitations, they have been assessed from the nearest public road or footpath which may be at greater distance from the property. Where this is the case, the assessment should be regarded as a 'best estimate' of the likely visual effects.

Stage 1: Visual Assessment

1.9.7 A visual assessment is undertaken to identify those properties where a significant visual effect on a view from the property is likely to occur. The methodology for this is set out previously under visual assessment and combines an assessment of 'sensitivity' with an assessment of 'magnitude'.

1.9.8 The sensitivity of individual residential receptors has been assessed as 'High' in each case due to the high susceptibility of residents in accordance with GLVIA 3, paragraph 6.33. The value of the view is also likely to be regarded as high by the residents themselves, but the views in this area are not nationally or locally designated for their scenic value and accord a medium value in this respect.

1.9.9 The assessment also takes account of cumulative effects likely to result from the visibility of other wind energy development. In order to identify the likely significant effects, and noting that the RVAA study area is 2km, the baseline of other wind energy development considered in this assessment has been limited to those wind farms within 10km of the Proposed Development.

1.9.10 Although other wind energy development may be visible within the wider area, it is considered unlikely that it would contribute to an effect on the RVAA.

Stage 2: Residential Visual Amenity Assessment

1.9.11 The second stage is to consider the residential visual amenity and whether, in terms of the wider public interest, the visual effects would result in unsatisfactory living conditions, leading to a property being regarded, objectively, as an unattractive (as opposed to a less attractive) place in which to live. Relevant information considered as part of the assessment may include, but is not limited to the following:

- Scale of Wind Farm:
  - Number and height of visible turbines;
  - The horizontal extent or Angle of View (AOV) of the visible turbine array; and
  - Separation distance (closest and furthest visible turbines).
- Description of Property, as far as this can be ascertained:
  - Orientation and size of property and whether views from the property towards the wind farm would be direct or oblique;
  - Location of principal rooms and main living areas such as living/dining rooms, kitchens and conservatories, as opposed to upstairs rooms (bedrooms / bathrooms), working areas such as farm buildings and utility areas;
  - Location of principal garden areas which may include patios and seating areas as opposed to less well used areas such as paddocks or garages; and
  - The effects of any screening by landform, vegetation or nearby built development.

- Location and Context:
  - The aspect of the property in terms of the overall use and relationship to the garden areas and surrounding landscape;
  - The principal direction of main views and visual amenity; and
  - The context and nature of any intervening structures e.g. other existing wind farm development, farm buildings or forestry.

1.9.12 The assessment has been further supported by aerial and ground level photography as well as map-based data, the production of ZTV plots and visualisations such as wirelines. The assessment takes account of the likely views from the ground floors of properties and main garden areas but excludes upper floors and other non-residential land that may be connected with the property. These areas cannot usually be assessed from public areas, unless they have been subject to further on-site assessment with the resident's permission.

1.9.13 Other factors affecting residential amenity such as noise and shadow flicker are not considered as part of this assessment.

1.10 Night-time Assessment

1.10.1 The night-time assessment follows the same methodology used for the assessment of landscape, visual and cumulative effects. The only difference is that it is conducted during periods of dawn to dusk and assesses the baseline night-time environment against the proposed additional, artificial lighting, in this case aviation warning lights, fitted to the proposed turbines.

1.10.2 The study area for the night-time assessment is also the same as the LVIA Study Area used for the landscape, visual and cumulative assessment.

1.10.3 As with the landscape and visual assessment, the sensitivity of the receptor to the Proposed Development (aviation warning lights) and the magnitude of change are combined to determine the level of effect likely to result from the aviation warning lights. The evaluation of significance and the nature of these effects is also described following the methodology used for the assessment of landscape, visual and cumulative effects.

1.10.4 Importantly, the night-time assessment is not a technical lighting impact assessment based on quantitative measurement of light levels, rather the assessment relies on professional judgement of what the human eye can reasonably perceive at the viewpoints / receptor locations.

1.10.5 The night-time assessment is supported by a baseline night-time environment or darkness survey and ZTV plots, baseline photography, wirelines and photomontages from selected viewpoints. These visualisations help to assess both the level of night-time visual impact for particular receptors and focus the assessment.

1.10.6 The night-time assessment would be reported in an appendix to the LVIA.

Night-time Viewpoint Analysis

1.10.7 A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect would occur. By arranging the viewpoints in order of distance it is possible to define a threshold or outer limit, beyond which there would be no further significant effects.

1.10.8 The night-time viewpoint analysis involves visiting the viewpoint locations during periods between dusk and dawn and viewing wirelines and photomontages prepared for each viewpoint location. The fieldwork is conducted in periods of fine weather with clear skies and considers seasonal changes such as reduced leaf cover or hedgerow maintenance.

Baseline Night-time Environment or Darkness Survey

1.10.9 During site visits a baseline night-time environment survey or 'darkness survey' is carried out at each viewpoint location. The purpose of the darkness survey is to establish the existing light levels perceived by the landscape architects at the viewpoints and determine their sensitivity to change. The following observations are recorded:

- Areas of darkness with no artificial light;
- Direct artificial lighting (where the light source is directly visible from the viewpoint);
- Indirect artificial lighting (where the light source is not visible but the light emanating from the light source is visible as in the case of 'sky glow');
- Static lighting, for example emanating from a residential property or street light; and
- Mobile or transient lighting, for example associated with moving vehicles, trains or aircraft.

1.10.10 Baseline photographs at each of the night-time assessment viewpoints are recorded.

Assessment of Night-time Sensitivity

1.10.11 In terms of landscape effects, a key determinant of the value and susceptibility of a landscape is the degree to which the landscape character can be discerned at night and the quality of the baseline 'darkness' – essentially is the area unlit or lit? There is a limited period of the night, during the twilight periods just after sunset or just before dawn when the landscape character maybe partially perceived and during periods when there are clear skies and under conditions such as a full moon. During these limited periods it may be possible to discern sufficient number of the key landscape characteristics, in particular, topography / skyline and some of the perceptual qualities, although other features such as colour, pattern, texture will be muted or not discernible. As darkness progresses these features cease to be visible. The susceptibility of the landscape at night is therefore variable and reduces from its highest or most susceptible during the day, through the twilight period, until the night when susceptibility would be at its lowest, during periods of greatest darkness.

1.10.12 The value of the landscape at night is recognised in designations that include National Parks and dark sky parks and more rarely in relation to local landscape designations and particular landscape character types, although the landscape value of non-designated landscapes is usually lower.

1.10.13 In terms of visual effects, the susceptibility of the receptor is primarily influenced by the activity of the viewer and residents are generally considered to be of higher sensitivity. A number of tourist locations are likely to be closed to the public during the hours of darkness, residents are most likely to be indoors, and hill walkers and people viewing the landscape from recognised viewpoints are less likely or unlikely to be present at those locations during the night. Again, the susceptibility of the receptor at night is most likely to reduce from its highest or most susceptible during the day, through the twilight period, until the night under conditions of greatest darkness when it would be at its lowest, although exceptions include may locations such as dark sky park viewpoints.

1.10.14 The value of the specific views and visual amenity at night is also recognised in designations that include National Parks and dark sky parks but more rarely in association with OS viewpoints, and scenic qualities associated with local landscape designations or tourist routes which tend to be focused on an appreciation of the landscape during the day with consequentially a less or a lower value ascribed during the night.

1.10.15 Factors affecting the susceptibility and value of landscape and visual receptors are combined to determine the sensitivity of the receptor and afforded a rating of High, Medium, Low or Very Low in a similar manner to that set out in **Tables 6.1.1** and **6.1.3**. For all of the above reasons it is likely that in most cases the overall sensitivity of the landscape and visual receptors will tend to be reduced under night-time conditions in comparison to the day-time receptors.

Assessment of Night-time Magnitude

1.10.16 In terms of landscape and visual effects the size / scale, geographical extent, and the nature of the effect in terms of its duration or whether it is cumulative is considered in order to assess the magnitude of the effect on the landscape or visual receptor.

1.10.17 The number of lights likely to be visible as well as their intensity can be described in objective terms and ZTVs indicating the theoretical visibility of numbers of lights and their intensity is mapped in order to assist the assessment process. Other objective factors include the FoV and the distance over which the lights may be seen. More subjectively the Proposed Development is considered against the baseline or darkness survey in terms of whether the proposed lighting would contrast with an unlit area or assimilate with other lights in a landscape or view that may already have multiple light sources. In this manner the assessment has to consider the degree to which the Proposed Development would affect the landscape character or designation, as far as that can be perceived at night.

1.10.18 In visual terms, a further consideration is the numbers of viewers which are likely to experience the views and visual amenity at night. It is reasonable to assume that the numbers of tourists and hill walkers, viewing the landscape at night for example, will tend to be few in number or rare, with most tourist destinations closed during the hours of darkness for example. Exceptions may include specific viewpoints within a dark sky park. Walkers and road users out at night, will also themselves tend to be sources of light from torches and vehicle headlights and thus affect the baseline or darkness survey.

1.10.19 The ‘magnitude’ or ‘degree of change’ resulting from the Proposed Development is described as ‘Major’, ‘Moderate’, ‘Minor’, ‘Negligible’ or ‘Zero’ in similar terms to the descriptions set out in **Tables 6.1.2** and **6.1.4.**

Evaluation of Night-time Level of Effects and Significance

1.10.20 The level effect is evaluated through the combination of sensitivity and magnitude of change. Once the level of effect has been assessed, and the nature of the effect is determined (whether this is direct / indirect; its duration, temporary / permanent; and whether it is beneficial / neutral / adverse or cumulative) a judgement is then made as to whether the level of effect is ‘significant’ or ‘not significant’ as required by the relevant EIA Regulations. This process is assisted by the matrix illustrated in **Table 6.1.5** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the Proposed Development and their conclusion, is presented in a comprehensive, clear and transparent manner.

Evaluation of Night-time Level of Effects and Significance

1.10.21 The level effect is evaluated through the combination of sensitivity and magnitude of change. Once the level of effect has been assessed, and the nature of the effect is determined (whether this is direct / indirect; its duration, temporary / permanent; and whether it is positive / neutral / negative or cumulative) a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix illustrated in **Table 6.1.5** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the Proposed Development and their conclusion, is presented in a comprehensive, clear and transparent manner.

1.11 Wild Land Assessment

1.11.1 The Wild Land Assessment is based on new NatureScot Technical Guidance: *Assessing Impacts on Wild Land Areas* (September 2020). The method and general approach to the wild land assessment is succinctly described in paragraphs 4 and 12 as follows:

"The method described employs the general approach and principles set out within the Guidelines for Landscape and Visual Impact Assessment (GLVIA) . The assessment of effects of a proposal on a WLA is an exercise distinct from landscape and visual impact assessment (LVIA) that can draw on but should not duplicate its information. The assessment should consider effects on the physical attributes and perceptual responses that contribute to the WLA qualities identified in the WLA descriptions."

"Each of the WLA descriptions set out their particular wild land qualities, with the physical attributes and perceptual responses contributing to it identified. These descriptions should form the starting point for an assessment of impacts on a WLA."

1.11.2 The NatureScot guidance sets out a number of steps:

- *"Step 1 - Define the study area and scope of the assessment:*

  Identify a study area appropriate to the scale of the proposal and extent of likely significant effects on the WLA.

- *Step 2 – Verify the WLA baseline:*

  Confirm the wild land qualities (set out in the WLA description) relevant to the study area, describing any major changes that have occurred since the description was prepared and the nature of their contribution to the WLA.

- *Step 3 – Assess the sensitivity of the qualities:*

  Through detailed field assessment within the study area, assess the sensitivity of the wild land qualities scoped in (including their physical attributes and perceptual responses), to the type and scale of change proposed.

- *Step 4 – Assess the magnitude of the effects:*

  Assess the effects on individual and / or combinations of qualities, drawing out which physical attributes and perceptual responses will be affected, how and to what degree. This should reflect the size or scale of change, its extent and duration.

- *Step 5 – Judge the significance of the effects:*

  Conclude on the overall significance (taking into account any mitigation), in terms of the study area and where relevant the wider WLA."

1.12 Production of ZTVs and Visualisations

1.12.1 Zones of Theoretical Visibility (ZTVs) and visualisations (wirelines / wirelines and photomontages) are graphical images produced to assist and illustrate the LVIA and the cumulative assessment. The methodology used for viewpoint photography and photomontages accords with the SNH guidance Visual Representation of Wind Farms, Version 2.2, February 2017 and THC guidance Visualisation Standards for Wind Energy Developments July 2016, whilst the methodology for the ZTV's, night-time and wild land visualisations follow the SNH guidance Visual Representation of Wind Farms, Version 2.2, February 2017. Further, additional guidance is provided by the Landscape Institute Technical Guidance Note: Visual Representation of Development Proposals, 17 September 2019.

Methodology for Production of ZTVs

1.12.2 The ZTVs are calculated using Resoft Wind Farm© software to generate the zone of theoretical visibility of the Proposed Development. This software creates a 3D computer model of the existing landscape and the Proposed Development using digital terrain data as follows:

- Ordnance Survey Terrain 50: Used to produce the main or standard ZTV plot and wirelines, these tiles provide a digital record of the existing landform of Great Britain, or Digital Terrain Model (DTM) at 10m elevation intervals based on 50m grid squares and models representing the specified geometry and position of the proposed turbines. The computer model includes the entire LVIA Study Area and takes account of the effects caused by atmospheric refraction and the Earth's curvature; and
- Ordnance Survey Terrain 5: Used to produce a more detailed ZTV plot or wireline for limited areas, often used where there are small undulations or crags within the landscape. These tiles provide a digital record of the existing landform of Great Britain based on 5m grid squares and models representing the specified geometry and position of the proposed turbines. The computer model includes the central LVIA Study Area and takes account of atmospheric refraction and the Earth's curvature.

1.12.3 The resulting ZTV plots are overlaid on Ordnance Survey mapping at an appropriate scale and presented as figures using desktop publishing/graphic design software.

1.12.4 The same computer software is also used to calculate cumulative ZTV plots based on the intervisibility of the Proposed Development with other existing, consented and application wind farms included in the CLVIA. In addition to the methods as described above, the layouts and geometries of the surrounding existing, consented and application wind farms are loaded into the same computer programme.

Methodology for Baseline Photography

1.12.5 Once a view has been selected, the location is visited, confirmed, and assessed with the aid of a wireline or similar visualisation in the field. The viewpoint location is micro-sited to avoid as far as reasonable foreground clutter and photographed during fair weather and light conditions. A photographic record is taken to record the view and the details of the viewpoint location and associated data are recorded to assist in the production of visualisations and to validate their accuracy.

1.12.6 The following photographic information is recorded:

- Date, time, weather conditions and visual range;
- GPS recorded 12 figure grid reference accurate to ~5-10 m;

- GPS recorded Above Ordnance Datum (AOD) height data;
- The focal length of lens is confirmed;
- Horizontal field of view (in degrees); and
- Bearing to Target Site (proposed development).

1.12.7 All photographs included in this assessment were recorded with a digital SLR camera set to produce photographs equivalent to that of a manual 35 mm SLR camera with a fixed 50mm or 75mm focal length lens as required.

1.12.8 All the resulting visualisations have been prepared to show other cumulative wind energy development in order that they may assist the cumulative assessment as well as the LVIA.

1.12.9 Whilst no two-dimensional image can fully represent the real viewing experience, the visualisation aims to provide a realistic representation of the Proposed Development, based on current information and photomontage methodology.

Weather Conditions

1.12.10 GLVIA 3 para 8.22 states:

"In preparing photomontages, weather conditions shown in the photographs should (with justification provided for the choice) be either:

- *representative of those generally prevailing in the area; or*
- *taken in good visibility, seeking to represent a maximum visibility scenario when the development may be highly visible".*

1.12.11 In preparing photomontages for the LVIA, photographs will be taken in favourable weather conditions that are representative of the weather conditions generally and where possible, will be taken during periods of 'good' or 'excellent' visibility conditions.

Methodology for Production of Visualisations

1.12.12 Each view has been illustrated with a photograph, a wireline and / or a photomontage indicating the Proposed Development. Definitions of each of these are described as follows:

- Baseline photograph: A photograph of the existing view recorded in fair weather conditions and usually presented as a panorama as required by the relevant SNH or THC guidance.
- Wireline or Wireframe: A computer generated model of the landscape and the Proposed Development.
- Photomontage is a visualisation which superimposes an image of a Proposed Development (in this case the wireline or wireframe) upon the baseline photograph, which is then rendered by computer software to produce an image of how the Proposed Development would appear from that viewpoint. Photomontage is a widespread and popular visualisation technique, which allows changes in views and visual amenity to be illustrated and assessed.

Baseline Photograph Production

1.12.13 Photographs are then taken using a digital SLR camera in combination with a panoramic head equipped tripod. Detailed information is then recorded on site to enable the

accurate alignment of the photographs with the wireline model (data such as: GPS grid co-ordinates; ground level information; compass bearings; and any other known references and viewpoint information).

1.12.14 To create the baseline panorama, the photographs from the viewpoint are then digitally joined using Adobe Photoshop or PTGui software to form a planar or cylindrical projection image or panorama using computer software to remove 'barrel distortion' caused by the camera lens. Colour correction and blending may differ between the SNH and THC panoramas due to differing stitching algorithms and the number of frames stitched. There are practical limitations to shooting viewpoint photographs only in very good or excellent visibility and at particular times of day or from location that avoid foreground clutter or other vertical features such as telegraph poles, particularly where this is a true representation of the view from that viewpoint area.

Wireline or Wireframe Production

1.12.15 The wirelines and photomontages are produced using Resoft Wind Farm© software to generate a perspective view of the wind farm. This software creates a 3D computer model of the existing landscape and the Proposed Development using digital terrain data and models representing the specified geometry and position of the proposed turbines. The computer model includes the entire LVIA Study Area and all visualisations take account of the effects caused by atmospheric refraction and the Earth's curvature. The computer model does not take account of the screening effects of any intervening objects and forestry, unless specified (see individual figures).

1.12.16 A wireline of the Proposed Development and the existing landform is generated for each viewpoint within the LVIA Study Area. These wirelines are used to assist the assessment on location at each viewpoint, the position of which, if required, is adjusted on site to achieve the most visible vantage-point of the Proposed Development (e.g. to avoid buildings, forestry, other features, potentially interfering with the view).

Photomontage Production

1.12.17 Visualisations will be produced for the agreed viewpoints identified in the LVIA and photomontages will aim to provide a photorealistic image of the appearance of the Proposed Development. 3D model representations are combined with the baseline view photographs to create a photorealistic rendered photomontage image of the development.

1.12.18 Visualisations that illustrate the Proposed Development are produced using a range of computer software, most commonly in this case Resoft WindFarm©. Others such as True View and 3D AutoCAD or Studio Max are also used for example.

1.12.19 The photomontage is produced by digitally combining or superimposing the wireline / wireframe or computer generation 3D model of the landscape and the Proposed Development onto the baseline photograph and rendering this in order to add colour, texture and lighting effects.

1.12.20 To produce the photomontage, the wireline turbines are rendered to appear 'life-like' taking into account the time of the photography and weather conditions occurring on the day.

1.12.21 The completed panoramas, wirelines, photomontages and accompanying data are then presented as figures using desktop publishing/graphic design software.

Limitations of Visualisations

1.12.22 The photomontage visualisations used in the LVIA are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs. SNH guidance advises that beyond 20km the visibility of turbines in the printed photomontages is difficult to see or reproduce realistically.

1.12.23 The photomontage visualisations of the Proposed Development have a number of limitations when using them to form a judgement on visual effect. These include:

- A visualisation can never show exactly what a Proposed Development will look like in reality due to factors such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image;
- The images provided give a reasonable impression of the scale and the distance to the Proposed Development but can never be 100% accurate to the as constructed effect;
- A static image cannot convey movement such as turbine blade rotation or other features such as the movement of water or the reflection from the sun. The assessment however will take account of turbine movement by examining animated versions of the photomontages on screen and / or other examples of existing wind farm development on site;
- The viewpoints illustrated are representative of views in the area but cannot represent visibility at all locations;
- To form the best impression of the effects, these images are best viewed at the viewpoint location shown;
- The visualisations must be printed and viewed at the correct size as indicated on the figures;
- Images should be held flat at a comfortable arm's length. If viewing these images on a wall or board at an exhibition, stand at arm's length from the image presented to gain the best impression; and
- It is preferable to view printed images rather than view images on screen. Images on screen should be viewed using a normal PC screen with the image enlarged to the full screen height to give a realistic impression.

Printing of Maps and Visualisations

1.12.24 All electronic visualisations and maps should be printed out and viewed at the correct scale as noted on the document.

Glossary of Terms and Abbreviations

Note: Those descriptions marked with an asterisk are as per the terminology provided in the GLVIA 3 glossary.

Term/abbreviation	Definition
AOD	Above Ordnance Datum
AoV / FoV	Angle of View / Field of View
Artificial light	Light produced by electrical means.
BT	Blade Tip
Candela	A unit of measure of luminous intensity, in a given direction.
CLVIA	Cumulative Landscape and Visual Impact Assessment
Constant light	Uninterrupted light source over a given time period.
Cumulative effects	Additional changes caused by a Proposed Development in conjunction with other similar developments or as a combined effect of a set of developments, taken together' (Scottish Natural Heritage, 2012)
Cumulative landscape effects	Effects that 'can impact on either the physical fabric or character of the landscape, or any special values attached to it' (Scottish Natural Heritage, 2012)
Cumulative visual effects: **In combination** **In succession** **Sequentially**	Effects that can be caused by combined visibility, which 'occurs where the observer is able to see two or more developments from one viewpoint' and/or sequential effects which 'occur when the observer has to move to another viewpoint to see different developments' (Scottish Natural Heritage 2012) In combination: Where two or more developments are or would be within the observer's arc of vision at the same time without moving his/her head (GLVIA 3, 2013 Table 7.1). In succession: Where the observer has to turn his/her head to see the various developments – actual and visualised (GLVIA 3, 2013 Table 7.1). Sequential cumulative effect. Occurs where the observer has to move to another viewpoint to see the same or different developments. Sequential effects may be assessed for travel along regularly used routes such as major roads or popular paths (GLVIA 3, 2013 Table 7.1).
Darkness survey	Visual survey the night-time environment and the identification of artificial light sources.
Development*	Any proposal that results in change to the landscape and/or visual environment.
Degree of change	A combination of the scale, extent and duration of an effect also defined as 'magnitude'.
Designated Landscape*	Areas of landscape identified as being of importance at international, national or local levels, either defined by statue or identified in development plans or other documents.

Term/abbreviation	Definition
Direct light	The artificial light source is visible. Note that light emanating from the window of a building is considered to be a 'direct' light source.
EIA	Environmental Impact Assessment
Elements*	Individual parts which make up the landscape, such as, for example, trees, hedges and buildings.
Enhancement*	Proposals that seek to improve the landscape resource of the site and its wider setting beyond its baseline condition.
Environmental fit	The relationship of a development to identified environmental opportunities and constraints in its setting.
Feature*	Particularly prominent or eye-catching elements in the landscape such as tree clumps, church towers or wooded skylines OR a particular aspect of the project proposal.
FoV	Field of View – the horizontal angle of the view illustrated in a visualisation.
Geographical Information System (GIS)	A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.
GLVIA 3	Guidelines for Landscape and Visual Impact Assessment, Third Edition, published jointly by the Landscape Institute and Institute of Environmental Management and Assessment, 2013.
Heritage	The historic environment and especially valued assets and qualities such as historic buildings and cultural traditions.
HH	Hub Height
Historic Landscape Characterisation (HLC) and Historic Land-use Assessment (HLA)	Historic characterisation is the identification and interpretation of the historic dimension of the present-day landscape or townscape within a given area. HLC is the term used in England and Wales, HLA is the term used in Scotland.
Indirect effects*	Direct effects relate to the host landscape and concern both physical and perceptual effects on the receptor. Indirect effects relate to those landscapes and receptors which separated by distance or remote from the development and therefore are only affected in terms of visual or perceptual effects. The Landscape Institute also defines indirect effects as those which are not a direct result of the development but are often produced away from it or as a result of a complex pathway.
Indirect light	The light source is not visible but the light emanating from the source is apparent.
Infrared light	A type of light not visible to the human eye.
Iterative design process	The process by which project design is amended and improved by successive stages of refinement which respond to growing understanding of environmental issues.
Key characteristics	Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.

Term/abbreviation	Definition
Land cover	The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use.
Landscape and Visual Impact Assessment (LVIA)	A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people's views and visual amenity.
Landscape Character Area (LCA)*	These are single unique areas which are the discrete geographical areas of a particular landscape type.
Landscape Character Assessment	The process of identifying and describing variation in the character of the landscape, and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive. The process results in the production of a Landscape Character Assessment.
Landscape Character Types (LCTs)*	Distinct types of landscape which are relatively homogenous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement patterns, and perceptual and aesthetic attributes.
Landscape capacity	The amount of specified development or change which a particular landscape and the associated visual resource is able to accommodate without undue negative effects on its character and qualities. (NE 2019)
Landscape character*	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape classification	A process of sorting the landscape into different types using selected criteria but without attaching relative values to different sorts of landscape.
Landscape constraints	Components of the landscape resource such as views or mature trees recognised as constraints to development. Often associated with landscape opportunities.
Landscape effects*	Effects on the landscape as a resource in its own right. An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern here is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. (GLVIA 3 2013, Para 5.1).
Landscape fit	The relationship of a development to identified landscape opportunities and constraints in its setting.
Landscape patterns	Spatial distributions of landscape elements combining to form patterns, which may be distinctive, recognisable and describable e.g. hedgerows and stream patterns.
Landscape quality (condition)*	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.

Term/abbreviation	Definition
Landscape qualities	A term used to describe the aesthetic or perceptual and intangible characteristics of the landscape such as scenic quality, tranquillity, sense of wildness or remoteness. Cultural and artistic references may also be described here.
Landscape receptors *	Defined aspects of the landscape resource that have the potential to be affected by a proposal
Landscape resource	The combination of elements that contribute to landscape context, character, and value.
Landscape sensitivity	The sensitivity of the landscape to a particular development considers the susceptibility of the landscape and its value.
Landscape strategy	The overall vision and objectives for what the landscape should be like in the future, and what is thought to be desirable for a particular landscape type or area as a whole, usually expressed in formally adopted plans and programmes or related documents.
Landscape value*	The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons. The value of the Landscape Character Types or Areas that may be affected, based on review of any designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value.
Level of effect	Determined through the combination of sensitivity of the receptor and the proposed magnitude of change brought about by the development.
Lux	A unit of illumination, the amount of light on a surface per unit area.
Magnitude (of effect)*	A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short term or long term in duration.
Mitigation	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible remedy identified effects. (GLVIA 3, 2013 Para 3.37).
Natural light	Light supplied by the sun, directly or indirectly, the moon and stars.
NSA	National Scenic Area
Perception	Combines the sensory (that we receive through our senses) with the cognitive (our knowledge and understanding gained from many sources and experiences).
Perceptual Aspects	A landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity. (GLVIA 3, 2013 Box 5.1)
Photomontage*	A visualisation which superimposes an image of the Proposed Development upon a photograph or series of photographs.
Beneficial or Adverse Types of Landscape Effect	The landscape effects may be beneficial, neutral, or adverse. In landscape terms – a beneficial effect would require development to add to the landscape quality and character of an area. Neutral landscape effects would include low or negligible changes that may be considered as part of the

Term/abbreviation	Definition
	'normal' landscape processes such as maintenance or harvesting activities. An adverse effect may include the loss of landscape elements such as mature trees and hedgerows as part of construction leading to a reduction in the landscape quality and character of an area.
Beneficial or Adverse Types of Visual Effect	The visual effects may be beneficial, neutral, or adverse. In visual terms – beneficial or adverse effects are less easy to define or quantify and require a subjective consideration of a number of factors affecting the view, which may be beneficial, neutral, or adverse. Opinions as to the visual effects of wind energy developments vary widely, however it is not the assumption of this assessment that all change, including substantial levels of change is an adverse experience. Rather this assessment has considered factors such as the visual composition of the landscape in the view together with the design and composition, which may or may not be reasonably, accommodated within the scale and character of the landscape as perceived from the receptor location.
Probability of Effect	The probability of a landscape and visual effect occurring as a result of this Development should be regarded as certain, subject to the stated project design and the continuance of the existing, baseline landscape resource, including known changes such as other permitted wind farm development. The probability of cumulative effects however is variable. Whereas those effects related to existing wind energy development and those under construction are considered as certain, effects related to development with planning consent are only considered as likely. Wind energy development sites for which there is a submitted planning application are considered as uncertain and other wind energy development for which no planning application has been made are considered as uncertain / unknown, as the level of uncertainty would be greater.
Proximity activated lighting	Lighting which is turned on by the detection of moving objects, such as aircraft detected by radar.
Rarity	The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type. (GLVIA 3 2013, Box 5.1)
RD	Rotor Diameter
Receptor	Physical landscape resource, special interest, or viewer group that will experience an effect.
Recreation Value*	Evidence that the landscape is valued for recreational activity where experience of the landscape is important. (GLVIA 3 2013, Box 5.1)
Representativeness*	Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.
Residual effects	Likely environmental effects, remaining after mitigation.
Scale Indicators	Landscape elements and features of a known or recognisable scale such as houses, trees, and vehicles that may be compared to other objects, where the scale of height is less familiar, to indicate their true scale.
Scenic quality	Depends upon perception and reflects the particular combination and pattern of elements in the landscape, its aesthetic qualities, its more intangible sense of place or 'genius loci' and other more intangible qualities. (GLVIA 3 2013, Box 5.1)

Term/abbreviation	Definition
Seascape	Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other.
Sense of Place (genius loci)	The essential character and spirit of an area: 'genius loci' literally means 'spirit of the place'.
Sensitivity*	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value associated to that receptor.
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Significant Effects	It is a requirement of the EIA Regulations to determine the likely significant effects of the development on the environment which should relate to the level of an effect and the type of effect. The significance of an effect gives an indication as to the degree of importance (based on the magnitude of the effect and the sensitivity of the receptor) that should be attached to the impact described. Whether or not an effect should be considered significant is not absolute and requires the application of professional judgement. Significant – 'noteworthy, of considerable amount or effect or importance, not insignificant or negligible'. The Concise Oxford Dictionary. Those levels and types of landscape and visual effect likely to have a major or important / noteworthy or special effect of which a decision maker should take particular note.
Sky glow	The brightness of the night sky in a built-up area as a result of light pollution, apparent as a diffuse artificial light in the sky above major towns and cities.
SNH / NatureScot	Scottish Natural Heritage Now known as NatureScot.
Susceptibility*	The ability of a defined landscape or visual receptor to accommodate the specific Proposed Development without undue negative consequences.
Sustainability*	The principle that the environment should be protected in such a condition and to such a degree that ensures new development meets the needs of the present without compromising the ability of future generations to meet their own needs.
Temporary or permanent effects	Effects may be considered as temporary or permanent. In the case of wind energy development the application is for a 40 year period after which the assessment assumes that decommissioning will occur and that the site will be restored. For these reasons the development is referred to as long term and reversible.
Time depth	Historical layering – the idea of landscape as a 'palimpsest', a much written-over asset of landscape.
Townscape	The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces.
True View Visuals	A mobile 3D augmented reality (AR) tool used to aid with the assessment. The True View Visuals tool indicates visibility of the Proposed Development to assist in confirming viewpoint positions as well as indicating limited or no

Term/abbreviation	Definition
	visibility of turbines in particular locations. Whilst the images are indicative only, the AR tool provides a comparable image to the accurate wirelines produced.
Type or Nature of effect	Whether an effect is direct or indirect, temporary or permanent, beneficial (positive), neutral or adverse (negative) solus or cumulative.
Viewpoints	Selected for illustration of the visual effects fall broadly into three groups: Representative Viewpoints: selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ – for example certain points may be chosen to represent the view of users of particular public footpaths and bridleways; Specific Viewpoints: chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, such as landscapes with statutory landscape designations or viewpoints with particular cultural landscape associations. Illustrative Viewpoints: chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations. (GLVIA 3 2013, Para 6.19)
Visual amenity	The overall views and surroundings, which provide a visual setting or backdrop to the activities of people living, working, participating in recreational activities, visiting or travelling through an area.
Visual dominance	A visual effect often referred to in respect of residential properties that in relation to development would be subject to blocking of views, or reduction of light / shadowing, and high levels of visual intrusion.
Visual effect*	Effects on specific views and on the general visual amenity experienced by people.
Visual Receptors*	Individuals and/or defined groups of people who have the potential to be affected by a proposal.
Visual sensitivity	The sensitivity of visual receptors such as residents, relative to their location and context, to visual change proposed by development.
Visualisation	Computer visualisation, photomontage, or other technique to illustrate the appearance of the development from a known location.
Wireline / Wireframe	A computer-generated line drawing of the DTM (digital terrain model) and the Proposed Development from a known location.
Zone of Theoretical Visibility (ZTV)*	A map, usually digitally produced, showing areas of land within which, a development is theoretical visible.

Appendix C
Ornithology Consultation

04 August 2022
Ref – Edinbane Wind Farm

Wood Environment & Infrastructure Solutions UK Limited
Partnership House
Regent Farm Road
Gosforth
Newcastle upon Tyne NE3 3AF
United Kingdom
Tel +44 (0) 191 272 6100
www.woodplc.com

For the attention of NatureScot

Dear Alex,

I understand that you have previously commented upon scoping requests for the nearby proposed Glen Ullinish II Wind Farm and I would like to inform you that Wood have been engaged by Vattenfall to undertake the Environmental Impact Assessment (EIA) for the replacement of the operational Edinbane Wind Farm on Skye. Our work is at an early stage and while I anticipate that a scoping request will be submitted in the coming months, I request that you treat this information as confidential at this stage.

The reason I am getting in touch ahead of the formal scoping process is to request comment upon the proposed baseline ornithology survey methods in support of the EIA for the replacement of Edinbane Wind Farm. As per NatureScot (2018) guidance relating to repowering of wind farms and their impacts on birds, 'it is important that developers contact us [NatureScot] at the early stages to discuss the scope of any bird assessment' as advice for each individual repowering scheme is 'case-specific'.

Designated sites within the vicinity of Edinbane include the Cuillin Special Protection Area (SPA), which is situated around 13 km to the south of the Site and is designated for its' golden eagle population. In our opinion, and supported by NatureScot, 2016, it is unlikely that breeding golden eagles from the SPA would range as far as the Site. Nonetheless, the population breeding across Skye is likely to be functionally linked and therefore Habitats Regulation Screening (HRA) Screening is proposed. There are no other internationally designated sites (SPAs or Ramsar sites) within 20 km of the proposed development nor any Sites of Special Scientific Interest (SSSI) citing bird interests within 10 km. Based on initial scoping of the Site and surrounding area, it is likely that it supports protected and/or notable species including breeding Schedule 1 species such as golden eagle, white-tailed eagle, hen harrier, merlin and greenshank. The Site may also support EU Birds Directive Annex I species (e.g. dunlin, golden plover and short-eared owl).

We intend to undertake a detailed desk-based review including requesting data from the Raptor Study Group (RSG) and RSPB, as well as a suite of supporting bird surveys, outlined below.

We propose the adoption of the following survey methods (detailed within NatureScot [2017] guidance) at the Site over a single calendar year between September 2022 to August 2023:

- Flight Activity Surveys will commence in September 2022 and it is anticipated that three Vantage Point (VP) locations would be sufficient to cover the potential development area. Six hours of VP effort from each location will be undertaken in all months except for April to July 2023, when nine

hours per month is proposed. The key target species are likely to comprise golden eagle, white-tailed eagle, hen harrier, greenshank, dunlin, golden plover, short-eared owl, merlin, and peregrine. From information available to date, it is likely that the VPs will be in the vicinity of NG 36406 49751, NG 34000 47000 and NG 35015 44352, though this may be subject to change following an initial site visit. One of these VP locations (NG 35015 44352) falls on the southernmost part of the access track and could be undertaken from a vehicle and the north-eastern most VP (NG 36406 49751) is screened from behind by forestry. The only exposed VP location is to the west (NG 34000 47000), and it is proposed that a hide would be used in this instance to attempt to reduce the impact on eagle activity in this area, although there may be a potential alternative to survey from a vehicle sited within the current layout. The locations and viewsheds of VP locations can be provided after the initial site visit.

- Raptor Surveys will comprise a four-visit approach undertaken between April and August 2023 and would focus on golden eagle, white-tailed eagle, hen harrier, short-eared owl and merlin. Surveys would cover the Site and will follow methods outlined within Hardey *et al* (2013). Access is unavailable outwith the Site, so historic Annex I and Schedule 1 raptor / owl nest / roost data within 2 km of the Site will be requested from the RSG for this area to support the impact assessment (this would include eagle nest data out to 6 km).
- Moorland Bird Surveys of the Site and 500 m buffer (scanned from within the red line boundary given lack of access outside the Site) following an adapted Brown and Shepherd (1993) methodology (Calladine *et al* 2009) as detailed in Gilbert *et al* (1998) and recommended in NatureScot (2017). Surveys will focus on the detection of breeding waders, but all other target species will be recorded. Four visits would be undertaken between mid-April and early-July 2023.
- Breeding diver surveys are not considered to be necessary given the lack of potential breeding waterbodies on or within 1.5 km of the Site.
- Wintering waterbird surveys are also not considered necessary given the lack of potential roost sites and suitable foraging habitat on or within 1 km of the Site.
- Specific raptor roost surveys are also not considered to be necessary given the lack of access outwith the Site and any roosting raptors within it will be picked up during those VP surveys undertaken around dusk and dawn (when raptors will be moving to/from roost sites).

The ornithology chapter would be produced in line with the Chartered Institute of Ecology and Environmental Management's (CIEEM's) Guidelines for Ecological Impact Assessment (EcIA) in the UK (CIEEM, 2018). The baseline reports, appended to the EcIA report, would form the baseline against which the potential impacts of the Proposed Development would be assessed, based on both the 'importance' of the receptor and the nature and magnitude of the impact. The chapter would report the significance of predicted impacts on ornithological receptors and recommendations for mitigation measures would be provided. The ornithology chapter would also contain Collision Risk Analyses (CRA) based NatureScot guidance (2017) where required. A cumulative assessment focused solely on wind farms would be carried out in accordance with recent guidance, which states that such assessments are required at the Natural Heritage Zone (NHZ) scale (with Edinbane included in the Western Seaboard NHZ) (Wilson *et al*., 2015). It is also our intention to commission PAT (or GET) modelling to accurately predict any potential range loss for golden eagle as part of the impact assessment.

It would be appreciated if NatureScot could provide any comments on the survey and assessment approach as soon as possible to allow any additional suggestions to be considered ahead of the start of surveys in September 2022.

While I appreciate that a final decision cannot be made until we have the results from the first year of survey, given that the proposed development falls largely on the site of the existing Edinbane Wind Farm (see **Figure 1**), it is possible that one year will be sufficient to adequately inform the EIA. I would also therefore appreciate your initial views on the likelihood of one year of survey being sufficient (noting that this initial view may change depending on survey/desk study results).

References

1. Brown, A. and Shepherd, K. 1993. A method for censusing upland breeding waders. In: *Bird Study 40:3*, pp 189-195.
2. Calladine, J., Garner, G., Wernham, C. and Thiel. A. 2009. The influence of survey frequency on population estimates of moorland breeding birds. In: *Bird Study 56:3*, pp 381-388.
3. Gilbert, G., Gibbons, D.W., and Evans, J. 2001. *Bird Monitoring Methods: a manual of techniques for key UK species*. RSPB, London, UK.
4. Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. 2013. *Raptors: A field guide to survey and monitoring*. Stationary Office, London, UK.
5. NatureScot. 2016 (v3). *Assessing Connectivity with Special Protection Areas (SPAs)*. NatureScot, Battleby.
6. NatureScot. 2017 (v2). *Recommended bird survey methods to inform impact assessment of onshore wind farms*. NatureScot, Battleby.
7. NatureScot. 2018. *Assessing significance of impacts from onshore windfarms on birds outwith designated areas*. NatureScot, Battleby.
8. Wilson, M., Austin, G., Gillings, S. and Wernham, C. 2015. *Natural Heritage Zone Bird Population Estimates. SWBSG Commissioned report number SWBSG_1504*. pp72. Available from: www.swbsg.org.

Yours faithfully

04 August 2022
Ref – Edinbane Wind Farm

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Regent Farm Road
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Tel +44 (0) 191 272 6100
www.woodplc.com

For the attention of RSPB

Dear Bea,

I understand that you have previously commented upon scoping requests for the nearby proposed Glen Ullinish II Wind Farm and I would like to inform you that Wood have been engaged by Vattenfall to undertake the Environmental Impact Assessment (EIA) for the replacement of the operational Edinbane Wind Farm on Skye. Our work is at an early stage and while I anticipate that a scoping request will be submitted in the coming months, I request that you treat this information as confidential at this stage.

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It would be appreciated if RSPB could provide any comments on the survey and assessment approach as soon as possible to allow any additional suggestions to be considered ahead of the start of surveys in September 2022.

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References

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Yours faithfully

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