Appendix 3.1 Scoping Report

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Bhlaraidh Wind Farm Extension

EIA Scoping Report

July 2019

Quality Management

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EXECUTIVE SUMMARY

SSE Generation Limited ('the Applicant) are preparing an application for the Bhlaraidh Wind Farm Extension ('Proposed Development'), located on the Glenmoriston Estate, near Invermoriston, Highlands. The application will be made to Scottish Ministers via the Scottish Government Energy Consents Unit (ECU) under Section 36 of the Electricity Act 1989. The application will be supported by an Environmental Impact Assessment Report (EIA Report) as required by the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended (the EIA Regulations).

The Proposed Development is located adjacent to the operational 32 turbine Bhlaraidh Wind Farm ('Operational Development') (planning reference: 12/02556/S36).

The total capacity of the Proposed Development is unknown at this early stage of the design process. However, it is proposed to be over 50MW, comprising turbines with a tip height of up to 180m and a rotor diameter of up to 158m. Preliminary analysis has enabled an indicative Turbine Development Area ('the Site') to be identified comprising of an expected 20 turbines. This will be subject to further technical and environmental review throughout the Environmental Impact Assessment (EIA) process.

This EIA Scoping Report forms part of the Environmental Impact Assessment (EIA) process. The aim of the document is to inform stakeholders about the Proposed Development and provide information on the proposed approach to the EIA. For each environmental parameter, the potential effects of the project that require further investigation are identified and the proposed scope of assessment in terms of studies and surveys to be undertaken discussed.

The detailed assessment methodologies for the various environmental parameters will be informed by responses to this EIA Scoping Report and through further consultation with relevant statutory consultees.

1 Introduction

1.1 Background and Context

1.1.1 SSE Generation Limited ('the Applicant) are preparing an application for the Bhlaraidh Wind Farm Extension ('Proposed Development'), located on the Glenmoriston Estate, near Invermoriston, Highlands. The application will be made to Scottish Ministers via the Scottish Government Energy Consents Unit (ECU) under Section 36 of the Electricity Act 1989. The application will be supported by an Environmental Impact Assessment Report (EIA Report) as required by the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended (the EIA Regulations).

1.1.2 The Proposed Development (Figure 1.1) is located adjacent to the operational 32 turbine Bhlaraidh Wind Farm ('Operational Development') (planning reference: 12/02556/S36). The British National Grid (BNG) reference for the centre point of the Site is 238732, 821202.

1.1.3 The total capacity of the Proposed Development is unknown at this early stage of the design process. However, it is proposed to be over 50MW, comprising turbines with a tip height of up to 180m and a rotor diameter of up to 158m. Preliminary analysis has enabled an indicative Turbine Development Area ('the Site') to be identified comprising of an expected 20 turbines. This will be subject to further technical and environmental review throughout the Environmental Impact Assessment (EIA) process.

1.1.4 Pre-application consultation was undertaken in the form of The Highland Council's (THC) Pre-Application Meeting (THC PAM)**. Following THC PAM, the Proposed Development has been amended to reflect discussions with Estate landowners. This amendment has resulted in a reduction in the number of turbines proposed within this Scoping Report (20 turbines) from that proposed at THC PAM (41 turbines).** The Pre-Application Advice Pack (PAAP) issued by THC is available in Appendix 1.1 with a figure showing both THC PAM and Scoping boundaries available in Appendix 1.2.

1.1.5 Figure 1.1 and Appendix 1.2 show the full site boundary including existing infrastructure from the Operational Development that could potentially be utilised by the Proposed Development (see Section 1.1.6). All other figures and appendices that accompany this Scoping Report show the Turbine Development Area boundary.

1.1.6 The Proposed Development will benefit significantly from the presence of the extensive network of existing access roads associated with the Operational Development and the Livishie hydroelectric power scheme. Alongside the existing access roads, opportunities to reopen Operational Development borrow pits and utilise existing laydown areas, will be incorporated into the site layout design where feasible. A feasibility assessment will be undertaken to determine if the Operational Development's substation can be utilised, or if extension of it is achievable, for the Proposed Development. Extension of the operational life of any of the Operational Development's infrastructure will be considered through the EIA process.

1.1.7 The associated infrastructure will include: site access, access tracks, crane hardstanding, turbine foundations, underground cabling, on-site substation and maintenance building, temporary construction compound(s), laydown areas, concrete batching plant, potential excavations/borrow workings, potential compound for battery storage and one or more permanent meteorological masts.

1.1.8 This document forms the Scoping Report submitted to ECU in order to request a Scoping Opinion from the Scottish Ministers, on the Environmental Impact Assessment (EIA) of the Proposed Development.

1.2 Need for Development

1.2.1 The science behind climate change is well established and points strongly towards a need to reduce our reliance on fossil fuels in order to avoid negative economic, environmental and social effects. International and European commitments to reducing CO_2 and tackling climate change have been made by all major economies. In response to these issues the UK has made significant, legally binding commitments to increase the use of renewable energy. As recently as May 2019 the Scottish Government announced its intention to set a legally binding goal to achieve net-zero greenhouse gas emission by 2045 at the latest (Scottish Government, 2019) and THC declared a climate and ecological emergency (THC, 2019). The Proposed Development relates directly to both the need and those commitments.

1.3 The Applicant

1.3.1 SSE Generation Limited is part of SSE Renewables, a leading developer, owner and operator of onshore and offshore wind farms in the UK and Ireland, with a vision to make renewable energy the foundation of a zero-carbon world. Part of the FTSE-listed SSE plc, our strategy is to drive the transition to a low-carbon future through the world class development, construction and operation of our fleet of onshore and offshore wind energy generation sites, and flexible hydro.

1.3.2 We operate the largest onshore wind energy fleet in the UK and Ireland, with almost 2GW of installed green energy capacity, and we have developed over 1GW of offshore wind farms including Scotland's largest, Beatrice (588MW). We aim to be the largest and most efficient developer and operator of onshore and offshore wind in the UK and Ireland with a development pipeline of over 7GW we have made the commitment to treble our renewable energy output by 2030. SSE Renewables continues to take forward development options for new onshore wind farms and extensions to existing wind farms and is well placed to take advantage of any future opportunities as they emerge.

1.3.3 We are committed to supporting local supply chains SSE's Responsible Procurement Charter and Procurement Policy both highlight the importance of sustainable supply chains. Key to this is sharing economic opportunities with the people and businesses close to SSE's operations. As well as working with communities directly, SSE has a structured approach to engaging with its strategic suppliers and looks to them to form constructive local relationships so that communities gain from SSE's significant capital investments. In 2018/19, SSE took action to ensure the sustainability of the Open4Business platform it created in 2012 for local business to access job opportunities at its sites. Investing in communities SSE recognises that it must be an active contributor to the communities it is part of, and has an on-going commitment to share value where it has been created.

1.3.4 SSE Renewables' Community Investment Funds support a diverse range of community projects near our renewable developments. In 2018/19, SSE Renewables provided its largest ever award, with £600,000 granted to build the Fort Augustus Medical Centre in the Great Glen, Scotland. Between its community fund programmes and its Be the Difference employee volunteering programme, which allows all employees to volunteer a working day each year, in 2018/19 SSE invested a total of £8.5m in communities across the UK and

Ireland, an increase from £6.5m the year before. This brings SSE's total investment in communities over the past five years to over £30m.

1.3.5 At SSE Renewables we develop great sites. We undertake excellent construction. We have strong relationships with suppliers. We have extremely high standards of operation.

1.4 ITPEnergised

1.4.1 ITPEnergised (ITPE) have been commissioned by the Applicant to coordinate the EIA process for the Proposed Development. The team has excellent experience of undertaking EIA work for wind energy developments, further details of which are available in Appendix 1.3.

1.5 Pre-Application Consultation

1.5.1 A Pre-Application Meeting (PAM) was held with The Highland Council (THC) on the 29th of May 2019. Advice was then provided in the form of a Pre-Application Advice Pack (Appendix 1.1), which has been taken account of within this Scoping Report.

1.5.2 It should be noted that THC PAM was based on a layout of 41 turbines (i.e. more the twice the number being considered in this Scoping Report). Further details on these changes are provided in Section 1.1.4.

2 Environmental Impact Assessment

2.1.1 The EIA (Scotland) Regulations 2017 require that before consent is granted for certain types of development, an EIA must be undertaken. The EIA (Scotland) Regulations 2017 set out the types of development which must always be subject to an EIA (Schedule 1 development) and other developments which may require EIA if they are above certain thresholds and are likely to give rise to significant environmental impacts (Schedule 2 development).

2.1.2 The Proposed Development falls within Schedule 2 of the EIA Regulations and has the potential to have some significant environmental effects. Therefore, it is the opinion of the Applicant that the Proposed Development qualifies as "EIA Development" and therefore the Applicant will submit an EIA Report, as part of the Section 36 application to the Scottish Ministers.

2.1.3 EIA is an iterative process which identifies the potential environmental effects that in turn inform the eventual design of the Proposed Development. It seeks to avoid, reduce, offset and minimise any adverse environmental effects through mitigation. It takes into account the effects arising during the construction, operation and decommissioning phases. Consultation is an important part of the EIA process and assists in the identification of potential effects and mitigation measures.

2.2 Purpose of EIA Scoping Report

2.2.1 The EIA Regulations provides for potential applicants to ask Scottish Ministers to state in writing the information that should be provided within the EIA Report. The 'Scoping Opinion' is to be offered following discussion with the consultation bodies.

2.2.2 The Applicant recognises the value of the scoping approach and the purpose of this report is to ensure that relevant issues are identified and to confirm that the assessment process described will meet legislative requirements.

2.2.3 This EIA Scoping Report:

- describes the existing site and its context;
- identifies key organisations to be consulted in the EIA process;
- establishes the format of the EIA Report;
- provides baseline information; and
- describes key issues and the proposed assessment methodologies for various technical assessments to be covered in the EIA Report.

2.2.4 In addition, each technical Section concludes by listing the key questions we would like the Scoping Opinion to answer.

2.2.5 This EIA Scoping Report will be issued to the Scottish Ministers via the ECU, who will seek opinions from a range of statutory and non-statutory consultees. A consultation list is enclosed as Appendix 2.1. Where requested, the report can be made available to other interested parties.

2.3 The EIA Report

2.3.1 The structure of the EIA Report will follow the requirements of EIA (Scotland) Regulations 2017 and other relevant good practice guidance. Essentially, the EIA Report will comprise three main parts:

- Volume 1 – Written Statement
- Volume 2 – Figures
- Volume 3 – Appendices

2.3.2 A Non-Technical Summary (NTS) will also be provided.

2.3.3 Volume 1 will comprise of the following chapters:

- Chapter 1 – Introduction;
- Chapter 2 – Proposed Development;
- Chapter 3 – Approach to EIA;
- Chapter 4 – Planning Policy;
- Chapter 5 – Ecology and Nature Conservation;
- Chapter 6 - Ornithology;
- Chapter 7 –Archaeology and Cultural Heritage;
- Chapter 8 – Landscape and Visual;
- Chapter 9 - Hydrology and Hydrogeology;
- Chapter 10 - Geology and Soils;
- Chapter 11 – Noise and Vibration;
- Chapter 12 - Traffic and Transport;

- Chapter 13 - Socio-economics;
- Chapter 14 – Climate Change;
- Chapter 15 – Other Issues;
- Chapter 16 - Schedule of Environmental Mitigation; and
- Chapter 17 – Summary of Residual and Cumulative Effects.

2.3.4 Each technical chapter (5-13) will include, as a minimum, the following sections:

- Introduction;
- Legislation, Policy and Guidance;
- Consultation;
- Methodology;
- Baseline;
- Assessment of Potential Effects;
- Mitigation;
- Assessment of Residual Effects;
- Assessment of Cumulative Effects;
- Summary; and
- References.

2.4 EIA Report Format

2.4.1 The EIA Report will be made available on DVD and hard copy although in the interest of sustainability we would encourage take up of the DVD format.

2.5 Supporting Documentation

2.5.1 Supporting documentation will accompany the submission of the EIA Report. This will include (but not be limited to):

- Planning Statement; and
- Outdoor Access Management Plan.

3 The Proposed Development

3.1 Introduction

3.1.1 This section describes the Proposed Development and provides information on its location, physical characteristics, proposed components and design. The turbine and infrastructure layout will be subject to an iterative design process as part of the EIA.

3.1.2 The Proposed Development is located on land owned by the Glenmoriston Estate, near Invermoriston in the Highlands.

3.1.3 One of the significant benefits of constructing and operating a wind farm in this location is the capacity to utilise the extensive network of existing access roads associated with the Operational Development and the Livishie hydroelectric power scheme.

3.1.4 The principal components of the Proposed Development are expected to include:

- Wind turbines;
- Turbine foundations;
- Crane hardstandings;
- On-site access tracks between turbines and from the point of access to the turbines;
- Underground cabling between the turbines;
- On-site substation and maintenance building with welfare facility;
- Temporary construction compound(s), laydown area(s) and concrete batching plant;
- Compound for potential battery storage; and
- Permanent meteorological mast(s).

3.1.5 Alongside the existing access roads, opportunities to reopen Operational Development borrow pits and utilise existing laydown areas, will be incorporated into the site layout design where feasible. A feasibility assessment will be undertaken to determine if the Operational Development's substation can be utilised, or if extension of it is achievable, for the Proposed Development. Extension of the operational life of any of the Operational Development's infrastructure will be considered through the EIA process.

3.2 Site Description

3.2.1 The Proposed Development will extend the Operational Development onto the adjoining land to the east and north.

3.2.2 The Proposed Development is located west of Loch Ness and the Great Glen, on an area of high rocky plateau. This open, undulating moorland features several rocky outcrops, small hills, many lochs, lochans, watercourses, areas of bog, tracks, hydroelectric infrastructure and turbines of the Operational Development. There are also several distinctive summits, including Meall Fuar-mhonaidh which slopes steeply down to the Great Glen. To the west, this plateau transitions to a rugged, exposed landscape of large mountains, while to the north and south, there are the wooded glens of Glen Urquhart and Glen Moriston, and to the north, the farmed broad Strathglass valley.

3.2.3 The low lying areas of the glens and river valleys contain the majority of settlement and transport infrastructure. There is very little settlement in higher level areas and land use tends to be limited to grazing (sheep and deer) and country pursuits (e.g. shooting and fishing). Man-made features in the area include transmission towers (particularly those of the Beauly-Denny overhead line) and wind turbines.

3.2.4 The closest private dwelling is approximately 2km from the Site.

3.3 Site Design

3.3.1 The Proposed Development would be optimised through the EIA process taking into account all environmental, technical and socio-economic constraints and opportunities. The

Applicant is already very familiar with the Site and its constraints and opportunities, as a result of the survey, design and construction work at the Hydroelectric scheme and the Operational Development. The Proposed Development will benefit from the presence of the significant network of existing hydroelectric power and Operational Development access roads, which will be incorporated into the site layout design where feasible.

3.3.2 The dimensions of the proposed turbines will be determined as the project design progresses. At this stage it is anticipated that the turbines will have a tip height of up to 180m and a rotor diameter of up to 158m. Preliminary analysis has enabled an indicative development area to be identified comprising of an expected 20 turbines. It is anticipated that the total capacity will be in excess of 50MW.

3.3.3 The blades will be made from fibreglass-reinforced epoxy and the tower will be constructed from rolled steel plate. The finish and colour of the turbines is likely to be semi-matt and pale grey.

3.4 Cumulative Developments

3.4.1 Schedule 4, regulation 5 of the EIA Regulations 2017 details the information for inclusion in EIA Reports. Schedule 4, regulation 5 (e) states the following with respect to cumulative effects: *"the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources".*

3.4.2 Consultation and discussion with THC, Scottish Natural Heritage (SNH) and other bodies as required will be carried out to determine which wind farms have the potential to cause significant cumulative effects and therefore should be included within the EIA. The approach taken to identify the development projects that should be included in the baseline for the cumulative impact assessment will be tailored so that it is appropriate to each topic under consideration.

3.5 Electrical Layout and Grid Connection

3.5.1 Turbines would be electrically connected to each other via inter-array cable circuits. An onsite substation, which would house transformer(s) and associated switchgear, would convert the electricity generated by the turbines into an appropriate voltage for onward transmission into the National Grid.

3.5.2 The Applicant will make an application to National Grid and the network operator for connection to the wider electricity network via an offsite grid connection. Consideration of the environmental effects associated with the offsite grid connection would be properly considered by the network operator once the relevant information becomes available during the design and permitting process for the grid connection. Consequently, offsite grid connection will not be considered in the EIA Report.

3.6 Construction Phase

3.6.1 It is anticipated that the construction phase of the Proposed Development would be completed over a period of approximately 24 months.

3.6.2 Given the remote location, it is likely that two site compounds would be required during construction. The site compounds would include site cabins and welfare facilities for construction workers and could also be used as a laydown area for the delivery of some

materials. Compounds in place for the Operational Development will be utilised where practical.

3.6.3 Stone and sand required to construct any new access tracks are likely to be obtained from borrow pits within the Site or those utilised during the construction phase of the Operational Development. The exact location of borrow pits would be dependant upon site surveys, availability of suitable material and proximity to where it is required. Should a suitable borrow pit search area not be identified within the Site, the Applicant will need to make provision for the import of aggregate from a suitable offsite source.

3.6.4 All statutory legislation and other best practice guidance would be fully complied with during construction.

3.6.5 Construction mitigation and environmental protection measures would be implemented via a Construction Environmental Management Plan (CEMP). An Outline CEMP will be provided within Volume 3 – Appendices of the EIA Report.

3.7 Operational Phase

3.7.1 Routine operational and maintenance work would be carried out as necessary.

3.8 Decommissioning Phase

3.8.1 At the end of the operational lifespan, decommissioning would take place and the turbines removed, or a new application would be made to extend the consent for the existing turbines or to replace the turbines.

4 Planning Policy Context

4.1 Introduction

4.1.1 This section provides an overview of the planning policy context for the Proposed Development. A more detailed discussion and evaluation of relevant policies will be included within the Planning Statement that will be provided as a supporting document with the Section 36 Application. An up-to-date list of relevant planning policies will be contained within the EIA Report.

4.2 Legislation

4.2.1 An Application for the Proposed Development will be made to Scottish Ministers under Section 36 of the Electricity Act 1989 and associated deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended.

4.2.2 In accordance with Schedule 9 of the Electricity Act 1989, the Applicant:

- *"shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and*
- *shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects".*

4.2.3 The environmental effects of the Proposed Development will be studied, and the results will be presented in an EIA Report in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. The findings will be used to assess the compliance of the Proposed Development against the relevant Development Plan policies which will be set out in a Planning Statement.

4.3 National Planning Policy

National Planning Framework 3

4.3.1 National Planning Framework (NPF) provides a framework for long-term spatial development in Scotland (Scottish Government, 2014a). The third NPF (NPF3) was laid before the Scottish Parliament and approved in June 2014, and it sets out the Government's development priorities over the next 20-30 years and identifies national developments which support the development strategy. The central vision is set out over four key policy objectives for Scotland to be: a successful, sustainable place; a low carbon place; a natural, resilient place; and, a connected place.

Scottish Planning Policy

4.3.2 Scottish Planning Policy (SPP) was published by the Scottish Government in June 2014 and sets out a national policy framework for land use planning (Scottish Government, 2014b). Guidance regarding renewable energy including onshore wind farms is contained within the renewable energy section of the document. This consolidated document supersedes previous Scottish Planning Policies (SPPs) and National Planning Policy Guidelines (NPPGs).

Onshore Wind Policy Statement and Scottish Energy Strategy

4.3.3 The Scottish Government published Onshore Wind Policy Statement in December 2017 (Scottish Government, 2017a) alongside the Scottish Energy Strategy (Scottish Government, 2017b). It considers the various issues facing the sector and actions being taken to mitigate these concerns. The Scottish Energy Strategy sets a 2030 target for the equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied by renewable sources. This builds on the previous target set in 2009, which required 30% of Scotland's heat, transport and electricity needs to be met by renewable sources.

Scottish Government web-based Renewables Guidance

4.3.4 Onshore Wind Turbines (Scottish Government, 2014c) provides greater clarity and focus for planning authorities in locating wind farms and assessing wind farm applications. It also places emphasis on the importance of pre-application discussions.

4.4 Local Planning Policy

4.4.1 The Site lies entirely within the jurisdiction of The Highland Council. The Proposed Development would be considered against the following Local Development Plan documents.

Highland-wide Local Development Plan

4.4.2 The Highland Wide Local Development Plan (HwLDP), adopted in 2012, provides the local planning framework for the area and provides the general policy context against which the Proposed Development will be assessed. It is anticipated that the proposal will be guided primarily by the following key HwLDP policies:

- Policy 57 (Natural, Built and Cultural Heritage);
- Policy 61 (Landscape); and
- Policy 67 (Renewable Energy Developments).

4.4.3 Other key policies from the HwLDP that will be considered include: Policy 28 (Sustainable Design), Policy 30 (Physical Constraints), Policy 55 (Peat and Soils), Policy 56 (Travel), Policy 58 (Protected Species), Policy 59 (Other Important Species), Policy 60 (Other Important Habitats), Policy 63 (Water Environment), Policy 64 (Flood Risk), Policy 66 (Surface Water Drainage), Policy 69 (Electricity Transmission Infrastructure) and Policy 77 (Public Access).

Area Local Development Plan

4.4.4 The Inner Moray Firth Local Development Plan (IMFLDP) 2015 sets out the policies and land allocations to guide development in the Inner Moray Firth over the next 20 years. The Highland Council has recently commenced a review of the IMFLDP and is currently undertaking a Call for Sites; it is anticipated that Main Issues Report stage will be reached around later 2019/early 2020. The IMFLDP has no specific policies relating to wind farms or the locality of the Proposed Development.

Supplementary Guidance

4.4.5 The Council has developed Supplementary Guidance (SG), of particular relevance being the Onshore Wind Energy SG (November 2016). It sets the main framework for determining onshore wind energy proposals.

4.4.6 As required by SPP, the SG includes the Council's Spatial Framework, which identifies the areas that are likely to be most appropriate for onshore wind energy development. The Proposed Development lies partially in Group 2 (where wind farms may be appropriate in some circumstances), and partially in Group 3 (where wind farms are likely to be acceptable, subject to detailed consideration) (SPP 2014).

4.5 Questions

4.5.1 **Are the planning policies identified appropriate for inclusion in the EIA and Planning Policy Statement?**

4.5.2 **Are there any other planning policies not listed in this Scoping Report that should be considered in the EIA?**

4.5.3 **Are there any local material considerations of relevance to the Proposed Development which should be considered?**

5 Ecology and Nature Conservation

5.1 Introduction

5.1.1 In the context of the Environmental Impact Assessment (EIA) Report, this chapter will assess the likely significant effects associated with ecology and nature conservation during the construction, operation and decommissioning phases of the Proposed Development. The assessment of the ornithological, hydrological and peat resources will be presented in separate chapters.

5.1.2 The specific objectives of the assessment will be to:

- Identify where there is potential for significant effects on designated sites and habitats considered to be of ecological value.
- Detail the presence/possible presence of protected species and other species of particular ecological value.
- Describe the mitigation measures that have been committed to in order to avoid or reduce impacts.
- Assess the significance of residual effects that are likely to remain following implementation of mitigation and restoration measures and describe if any result in likely significant effects on ecological features.

5.2 Legislation, Policy and Guidance

5.2.1 The following key documents will be considered in undertaking the Ecological Impact Assessment (EcIA):

- Directive on the Conservation of Natural Habitats and Wild Flora and Fauna, 92/43/EEC (European Commission, 1992).
- The EU Water Framework Directive (European Commission, 2000).
- The Wildlife and Countryside Act (WCA), as amended (UK Government, 1981).
- The Protection of Badgers Act (UK Government, 1992).
- The Conservation (Natural Habitats &c.) Regulations, as amended (UK Government, 1994).
- Nature Conservation (Scotland) Act (Scottish Executive, 2004).
- Wildlife and Natural Environment (Scotland) Act (Scottish Government, 2011).
- UK Post-2010 Biodiversity Framework (UK Government, 2012).
- 2020 Challenge for Scotland's Biodiversity (Scottish Government, 2013).
- Scottish Planning Policy (Scottish Government, 2014).
- Highland Biodiversity Action Plan (BAP) 2015-2020 (Highland Environment Forum, 2015).

5.2.2 The EcIA will be completed in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines (CIEEM, 2016).

5.3 Consultation to Date

5.3.1 A pre-application meeting for the Proposed Development occurred on the 29th of May 2019 between the Applicant and The Highland Council (THC), Scottish Natural Heritage (SNH), the Scottish Environment Protection Agency (SEPA) and the Energy Consents Unit (ECU). With respect to ecology and nature conservation, SNH identified the following areas of importance:

- Impacts on designated sites, in particular the River Moriston SAC (Pre-Application Advice Pack).
- Not envisaging impacts on a wider scale.
- Information provided in the previous application for the Operational Development and for the Druim Ba scheme (15/03998/FUL).
- Deer Management Plan to determine where they are going if they are pushed off the Site during construction.
- NVC surveys for the development area.

5.3.2 SEPA noted the following:

- Welcome the fact that the indicated layout includes buffers to watercourses and water features. However, a further buffer may be required (1) above lochs, as impacts on lochs from sedimentation, should it reach them, are likely to be significant, and (2) where there are steep slopes adjacent to the watercourse.
- Groundwater Dependent Terrestrial Ecosystems (GWDTE) will inevitably be present and the layout and design of the development must avoid impact on such areas.

5.3.3 In addition to Scoping, further engagement with SNH is anticipated in July 2019.

5.4 Proposed Scope of Assessment

Desk Study

5.4.1 A desk study will be undertaken to review the Environmental Statement (Environmental Impact Assessment Report of the Operational Development) and any other relevant developments. A data request from the Highland Biological Recording Group or National Biodiversity Network (NBN) Gateway will be requested. This information will be used to inform the baseline for the EcIA and to inform the field surveys to be undertaken.

Field Surveys

Extended Phase 1 Habitat Survey

5.4.2 An extended Phase 1 habitat survey of the Site was undertaken, defined as the area within the Site and a 250 m buffer beyond the Site to ensure coverage around all proposed infrastructure for the Proposed Development. The Phase 1 survey followed guidance in JNCC (2010) and involved mapping all of the habitats found within the Site. Habitats and features of greater ecological importance were noted using target notes to be referenced in the EcIA.

5.4.3 A protected faunal species survey of the Site was undertaken concurrently with the Phase 1 habitat survey. The survey looked for field signs of any protected faunal species and recorded any sightings. Species-specific survey methods for water vole *Arvicola amphibius* (Dean *et al.,* 2016) and otter *Lutra lutra* (Chanin, 2003) were followed as these species are known to be present in the area.

5.4.4 The extended Phase 1 habitat survey was undertaken from the 24th to the 28th of June 2019.

National Vegetation Classification (NVC)

5.4.5 An NVC survey was undertaken as described in Rodwell (1998). These surveys classify habitats by the plant communities recorded. Surveys involved measuring species cover in quadrats, which was then used to determine habitat type. Targeted NVC surveys of all potential wetland habitats within the Site and to an appropriately sized buffer beyond the Site (i.e. a maximum of 250m around all proposed infrastructure) were undertaken in order to determine the presence of potential GWDTE. NVC surveys are used by SEPA to inform their GWDTE assessment (SEPA, 2017). The data produced during the NVC surveys will be passed on to the Applicant and the project hydrologist/hydrogeologist for inclusion within the EIA Report.

5.4.6 The survey also recorded peatland habitat condition, mapping areas of bare peat and montane habitat and any features affecting bog integrity, including ditches. In order to accurately classify bog habitats, sphagnum species were identified to species level. A particular focus was whether areas of blanket bog that appeared free from human modification, might still be considered to be modified bog as a result of natural erosion or weathering processes.

5.4.7 The NVC survey was undertaken from the 24th to the 28th of June 2019.

Bat Surveys

5.4.8 A programme of static bat surveys has commenced, adapted from recent guidance (SNH, 2019). Based on THC PAM boundary, seventeen static detectors were proposed to be deployed (one for each of the first ten turbines then one for each further three turbines). Fifteen static detectors were deployed on the 30th of May 2019 (13 Anabat Expresses and two SM2s)[1].

5.4.9 To reflect the change from THC PAM boundary to the Scoping boundary, eight detectors, which no longer occur on the Site, will be removed. Three additional detectors were deployed on the 25th and 26th of June 2019, leaving a total of ten detectors within the Scoping boundary (see Figure 5.1). Three further detectors will be deployed within the Scoping boundary in August 2019. The ten currently deployed detectors have good coverage of the Site, which is known to have low bat activity from previous surveys. Data will be collected from the detectors until September 2019.

Fish and Freshwater Pearl Mussel

5.4.10 A fish and freshwater pearl mussel *Margaritifera margaritifera* habitat suitability assessment was undertaken to determine the full extent of what is required for fish and aquatic invertebrate surveying. The requirement of a Habitats Regulations Appraisal (HRA) for the River Moriston SAC will be determined pending further assessment.

5.4.11 Freshwater pearl mussel habitat suitability assessments were based on available habitat and surveying information (SNH, 2018). Fish habitat suitability assessment were based on

[1] Seventeen detectors were ordered in time for the May visit but four arrived without microphones. In order to deploy as many detectors as possible, two SM2s were used as temporary replacements for two of the Anabat Expresses. The May/June data will be two detectors short but all 17 detectors will be deployed from the June visit onwards and this is not considered to be a significant limitation to the data gathered.

Environment Agency and Scottish Fisheries Co-ordination Centre (SFCC) salmonid habitat assessment protocols (Summers *et al.*, 1996; Hendry & Cragg-Hine, 1997).

5.4.12 The fish and aquatic invertebrates habitat suitability assessment were undertaken at the same time as the extended Phase 1 habitat survey from the 24th to the 28th of June 2019.

Ecological Impact Assessment

Feature Evaluation

5.4.13 Habitats and species (i.e. ecological features) identified within the ecological study area will have ecological values assigned using the standard scale that classifies ecological features within a defined geographic context (CIEEM, 2016). The classification uses recognised and published criteria where the ecological features are assessed in relation to their size, diversity, naturalness, rarity, fragility, typicalness, connectivity with surroundings, intrinsic value, recorded history and potential value. Table 5.1 describes the frame of reference that has been used.

Table 5.1: Geographic Importance

Geographic Importance	Examples
International	Internationally designated nature conservation sites including SAC, Ramsar Site, Biogenetic Reserve, World Heritage Site, Biosphere Reserve, candidate SACs and potential Ramsar Sites; discrete areas which meet the published selection criteria for international designation but which are not themselves designated as such; or a viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas which are essential to maintain the viability of a larger whole. Resident or regularly occurring populations of species which may be considered at an international level, such as European Protected Species (EPS), the loss of which would adversely affect the conservation status or distribution of the species at an international level; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.
National	Nationally designated nature conservation sites SSSI, National Nature Reserves (NNR), Marine Nature Reserve; discrete areas which meet the published selection criteria for national designation (e.g. SSSI selection guidelines) but which are not designated as such; or areas of a key habitat type identified in the UK Post-2010 Biodiversity Framework (UK Government, 2012). Resident or regularly occurring populations of species which may be considered at the national level, such as species listed in Schedules 5 and 8 of the Wildlife and Countryside Act 1981 (UK Government, 1981), the loss of which would adversely affect the conservation status or distribution of the species across Britain or Scotland; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.
Regional/County	Areas of a key habitat type identified in the Regional BAP; viable areas of key habitat identified as being of Regional value in the appropriate Natural Area Profile (or equivalent); or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Resident or regularly occurring populations of species which may be considered at an international level, or at the national level, the loss of which would adversely affect the conservation status or distribution of the species across the region; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.
District	Designated nature conservation sites at the local authority level in Scotland including statutory Local Nature Reserves (LNR) and non-statutory Local Nature

Geographic Importance	Examples
	Conservation Sites; or discrete areas which meet the published selection criteria for designation but which are not designated as such. Resident or regularly occurring populations of species which may be considered at the local authority level, the loss of which would adversely affect the conservation status or distribution of the species across the local authority area.
Local	Features of local value include areas of habitat or populations/communities of species considered to appreciably enrich the habitat resource on the Site or within the immediate surrounding area, for example, species-rich hedgerows. Resident or regularly occurring populations of species which may be considered at an international level, or at the national level, the loss of which would adversely affect the conservation status or distribution of the species across the Site or immediate surrounding area; or where the population forms a critical part of a wider population; or the species is at a critical phase of its life cycle.

5.4.14 A wide range of sources can be used to assign importance to ecological features, including legislation and policy. In the case of designated nature conservation sites, their importance reflects the geographic context of the designation. For example, sites designated as SACs are recognised as being of importance at an international level. Ecological features not included in legislation and policy may also be assigned importance due to, for example, local rarity or decline, or provision of a functional role for other ecological features. Professional judgement is used to assign such importance.

Criteria for Characterising Impacts

5.4.15 The potential impacts upon ecological features have been considered in relation to the Proposed Development. The impacts have been assessed without consideration of any specific mitigation measures that might be employed. The assessment of likely ecological impacts has been made in relation to the baseline conditions of the ecological study area. The likely impacts of development activities upon ecological features have been characterised according to several variables detailed in Table 5.2.

Table 5.2: Impact Characterisation

Parameter	Description
Direction	Impacts are either adverse (negative) or beneficial (positive).
Magnitude	This is defined as high, moderate, low or negligible, with these being classified using the following criteria: High: Total/near total loss of a population due to mortality or displacement or major reduction in the status or productivity of a population due to mortality or displacement or disturbance. Total/near total loss of a habitat. Medium: Partial reduction in the status or productivity of a population due to mortality or displacement or disturbance. Partial loss of a habitat. Low: Small but discernible reduction in the status or productivity of a population due to mortality or displacement or disturbance. Small proportion of habitat lost. Negligible: Very slight reduction in the status or productivity of a population due to mortality or displacement or disturbance. Reduction barely discernible, approximating to the 'no change' situation. Slight loss of habitat that is barely discernible from the habitat resource as a whole.
Extent	The area over which an impact occurs.

Parameter	Description
Duration	The time for which the impact is expected to last prior to recovery of the ecological feature or replacement of the feature by similar resource (in terms of quality and/or quantity). This is expressed as a short term, medium term, or long term effect relative to the ecological feature that is impacted.
Reversibility	Irreversible impacts: permanent changes from which recovery is not possible within a reasonable time scale or for which there is no reasonable chance of action being taken to reverse it. Reversible impact: temporary changes in which spontaneous recovery is possible or for which effective mitigation (avoidance/cancellation/reduction of effect) or compensation (offset/recompense/offer benefit) is possible.
Frequency and timing	The number of times an activity occurs will influence the resulting effect (if appropriate, described as low to high and quantified, where possible). The timing of an activity or change may result in an impact if it coincides with critical life-stages or seasons e.g. the badger breeding season.

5.4.16 The assessment only describes those characteristics relevant to understanding the ecological impact and determining the significance of the effect.

Criteria for Assessing Cumulative Effects

5.4.17 Cumulative effects can result from individually insignificant but collectively significant impacts taking place over a period of time or concentrated in a location. Cumulative effects are particularly important in EcIA as many ecological features are already exposed to background levels of threat or pressure and may be close to critical thresholds where further impacts could cause irreversible decline and significant effects. Further impacts can also make habitats and species more vulnerable or sensitive to change.

5.4.18 Developments included in the cumulative impact assessment are the following types of development within the same zone of influence where environmental information is available:

- Existing developments, either built or under construction.
- Approved developments, awaiting implementation.
- Proposals awaiting determination within the planning process with design information in the public domain. Proposals and design information may be deemed to be in the public domain once an application has been lodged, and the decision-making authority has formally registered the application.

5.4.19 Constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline are also considered.

5.4.20 The key principle for all cumulative impact assessments is to focus on the likely significant effects and in particular those that are likely to influence the outcome of the consenting process (SNH, 2012).

Significance Criteria

5.4.21 Significant effects are assessed with reference to the geographical importance of the ecological feature. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect

on a species which is on a national list of species of principal importance for biodiversity may not have a significant effect on its national population.

5.4.22 For the purposes of EcIA, apart from in exceptional circumstances, a significant effect in the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scottish Government, 2017) is only considered to be possible where the feature in question is considered to be of regional/county, national or international importance. That is not to say that impacts from the Proposed Development could not result in effects on features of district or local importance[2], simply that those effects are not considered significant under EIA Regulations.

5.4.23 The potential for significant effects, in the absence of mitigation, has been determined with reference to the geographic conservation importance and the criteria in Table 5.1. By referring to the criteria in Table 5.2, the assessment seeks to characterise the magnitude of the effects in space and time. Except in exceptional circumstances, effects characterised as negligible or low magnitude would typically be short term and reversible. Therefore, even if the feature is of regional/county, national or international conservation importance, a negligible or low magnitude effects is not likely to be significant. Moderate and high magnitude effects are likely to be medium to long term, and possibly irreversible. Where the feature is of regional/county, national and international conservation importance, moderate and high magnitude effects are, in general, likely to be significant.

5.4.24 Mitigation and/or compensation is proposed for all effects considered significant under the EIA Regulations. Where appropriate, as a good practice measure, additional controls and/or compensation may be proposed for effects on features of district or local importance, or where required in relation to protected species where legislation may require actions to protect populations or individuals.

5.4.25 Residual effects are characterised as either adverse (negative) or beneficial (positive) and either significant or not significant, taking account of mitigation and/or compensation proposals.

5.5 Baseline Conditions

Desk Study

5.5.1 The Site is located within a rolling upland plateau to the west of Loch Ness in the Great Glen. The Site is dominated by open moorland, characterised by peatland dominated habitats with many rocky outcrops, small lochans and minor watercourses. The habitats on the Site were considered likely to support otter and water vole. The Site brackets the eastern and northern extents of the Operational Development. No designated sites for ecology or nature conservation occur on the Site. Levishie Wood Site of Special Scientific Interest (SSSI) occurs approximately 1km to the south of the Site and is notified for its juniper-rich birch woodlands. No other designated sites for ecology or nature conservation occur within 2km of the Site.

[2] It is noted that the CIEEM (2016) Guidelines for Ecological Impact Assessment allow for effects to be categorised as 'significant' at any geographic scale e.g. from local to international, however in the context of the EIA Regulations, an effect on features of local and district conservation importance, are, in general, not considered significant under the EIA regulations.

Field Surveys

5.5.2 Figure 5.2 shows the habitats found during the Phase 1 habitat survey. The following habitats were recorded:

- blanket bog;
- wet modified bog;
- wet heath;
- wet heath/acid grassland mosaic;
- acid grassland;
- coniferous woodland plantation;
- standing water; and
- running water.

5.5.3 Juniper *Juniperus communis* was recorded throughout the Site, usually as small, single plants or saplings i.e. no mature plants were present.

5.5.4 Preliminary analysis indicates that some areas of wet heath are likely to be M15 *Scirpus cespitosus-Erica tetralix* wet heath, which is a moderately GWDTE.

5.5.5 The protected species survey recorded the following protected (and notable) species:

- water vole burrows in several watercourses, including the Allt Saigh and tributaries of Loch Carn Tarsuinn;
- two otter spraints on the Allt Saigh but no signs of protected resting areas or dwellings;
- marsh fritillary *Euphydryas aurinia* near Carn à Choire Leith and south west of Loch an Dubhair;
- common lizard *Zootoca vivipara* and common frog *Rana temporaria* throughout the Site;
- a palmate newt *Lissotriton helveticus* in a tributary of Loch a' Chràthaich;
- a single sighting of a mountain hare *Lepus timidus*, plus droppings; and
- red deer *Cervus elaphus*, primarily where the Proposed Development overlaps with the Operational Development.

5.5.6 The fish and freshwater pearl mussel habitat suitability assessment is summarised in Confidential Appendix 5.1.

5.5.7 The following ecological features are considered to be of sufficient sensitivity to warrant inclusion in the EIA:

- Peatland habitats, comprising blanket bog, wet modified bog and wet heath. These habitats are included in Annex 1 of the Habitats Directive (European Commission, 1992) and are sensitive to environmental change, such as changes to hydrology, carbon function, species composition and nutrient status.

- Wetland habitats with the potential to be GWDTE. GWDTE are sensitive to changes in hydrology and are a priority under the Water Framework Directive (European Commission, 2000).
- Otter, water vole, common lizard, marsh fritillary and bat species. Otter and bat species are EPS under the Habitats Directive (European Commission, 1992). Water vole receives partial protection for places of shelter or protection under Schedule 5 of the WCA (UK Government, 1981) and common lizard receive protection from intentional or reckless killing and injury under the WCA. Marsh fritillary are nationally scarce in the UK and protected under the WCA.

5.6 Potential Effects

5.6.1 The assessment would consider the potential for significant effects on ecological features associated with the construction and operation of the Proposed Development. Decommissioning is considered to result in similar potential significant effects to construction, although the magnitude of the impact is likely to be lower.

Construction Impacts and Effects

5.6.2 The following potential effects will be assessed:

- damage/modification and loss of habitats, important plant species and potential GWDTEs;
- habitat fragmentation;
- changes to the hydrology of habitats, particularly potential GWDTEs;
- pollution;
- disturbance of otter;
- damage or destruction of water vole burrows; and
- accidental injury or death of common lizard and marsh fritillary.

Operational Impacts and Effects

5.6.3 The following potential effects will be assessed:

- habitat modification or fragmentation;
- changes to red deer movement;
- injury or death of bat species; and
- pollution.

5.7 Issues Scoped Out

Amphibians

5.7.1 In the UK, the common frog is only protected from trade and sale under the WCA. While common frog occurs in moderate numbers due to the suitable habitat present on the Site, they are scoped out from further assessment as the EIA will assume amphibians are present in suitable habitat and the appropriate mitigation designed to protect common lizard from

accidental injury and death will also protect common frog and other amphibians. A standard 50m buffer around all watercourses will also protect any amphibians within the water environment.

Fish and Freshwater Pearl Mussel

5.7.2 Access tracks of the Proposed Development will cross over a number of watercourse but the design will aim to locate other infrastructure a minimum of 50m from all watercourses. On the basis that the construction work will be carried out following good practice measures for pollution prevention and taking a precautionary approach by assuming the presence of sensitive aquatic ecology (including fish and freshwater pearl mussel), significant effects associated with the Proposed Development on aquatic ecology are unlikely and, therefore, this topic is scoped out of further EIA assessment.

Invertebrates

5.7.3 Confirmation of the presence or absence of this species group is considered unnecessary as the EIA Report would adopt a precautionary approach and include appropriate mitigation, where required, to avoid significant effects.

Mountain Hare

5.7.4 Mountain hare are not present in large numbers in the Proposed Development. As a result, the EIA Report chapter would assume hare are present within suitable habitat, with appropriate mitigation designed. As such, this topic is scoped out of further assessment.

5.8 Potential Mitigation

By Design

5.8.1 The layout of the Proposed Development will be designed to avoid habitats of the highest ecological importance and sensitivity, and watercrossings will avoid the known locations of water vole burrows. Where possible, the existing infrastructure of the Operational Development will be used.

During Construction

5.8.2 A protected species survey will be completed prior to the start of construction, particularly focusing on water vole and otter, in order to record any new signs of protected species not recorded during previous surveys.

5.8.3 A Construction Environmental Management Plan (CEMP) will be developed to include protection and mitigation measures, as well as monitoring programmes, for all predicted and potential environmental impacts identified.

5.8.4 The risk of pollution from surface runoff to watercourses and aquatic habitats will be prevented by ensuring that runoff control measures, such as interceptor drains and silt traps to assist in maintaining water quality, are in place. A standard buffer of 50m from all construction work and infrastructure, excluding watercrossings, will also protect and maintain sensitive water habitats and species.

During Operation

5.8.5 Areas of temporary wind farm infrastructure required during construction will be reinstated during operation to allow the natural recolonisation of habitats.

5.8.6 Peat management and mitigation is detailed in Section 10 of this Scoping Report.

5.9 Questions

5.9.1 The scoping exercise has reviewed the ecological features within 2km of the Proposed Development and has identified those that have the potential to be impacted. These include Annex 1 habitats, such as blanket bog and wet heath, and protected species, such as otter, water vole and bat species. The likely direct and indirect potential impacts of the Proposed Development on these features would be assessed and mitigation measures, where appropriate, would be proposed to prevent, reduce or offset any likely significant adverse effects identified.

5.9.2 **As part of the scoping exercise, the following questions are proposed:**

- **Is the scope proposed appropriate?**
- **Do you agree with the scoping out of amphibians and aquatic ecology, such as fish and freshwater pearl mussel?**
- **Are there any issues not covered by this scope?**

6 Ornithology

6.1 Introduction

6.1.1 This section sets out the proposed approach to the assessment of potential effects on ornithology during construction, operation and decommissioning of the Proposed Development.

6.1.2 The assessment will be undertaken in line with best practice and relevant European and national legislation, policy and guidance.

6.2 Legislation, Policy and Guidance

6.2.1 The legislation and policies which are directly relevant to the assessment of ornithological effects have been summarised below. Refer to Section 4, for planning policies relevant to the Proposed Development.

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

- Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive);
- Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (Habitats Directive);
- Environmental Impact Assessment Directive 2014/52/EU; and
- European Commission (2010) Natura 2000 Guidance Document 'Wind Energy Developments and Natura 2000'. European Commission, Brussels.

6.2.3 The following national legislation and policy will be considered as part of the assessment:

- The Nature Conservation (Scotland) Act 2004 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);

- Circular 1/2017; The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- Policy Advice Note PAN 1/2013 – Environmental Impact Assessment (Scottish Government 2013).

6.2.4 The following guidance will be considered as part of the assessment:

- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. CIEEM, Winchester;
- Eaton M.A., Aebischer N.J., Brown A.F., Hearn R.D., Lock L., Musgrove A.J., Noble D.G., Stroud D.A. and Gregory R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746;
- Scottish Natural Heritage (SNH) (2000). Windfarms and birds: calculating a theoretical collision risk assuming no avoidance action. SNH Guidance Note. SNH;
- SNH (2009). Environmental Statements and Annexes of Environmentally Sensitive Bird Information; Guidance for Developers, Consultants and Consultees;
- SNH joint publication (2019). Good Practice during Wind Farm Construction. Version 4
- SNH (2016). Assessing connectivity with Special Protection Areas (SPAs);
- SNH (2018a). Assessing Significance of Impacts from Onshore Wind Farms Out-with Designated Areas;
- SNH (2018b). Assessing the cumulative impacts of onshore wind farms on birds. SNH Guidance Note;
- SNH (2018c). Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland;
- Scottish Executive Rural Affairs Department (SERAD) (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;
- The Highland Biodiversity Action Plan 2015 – 2020; and
- The Scottish Biodiversity List (https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list).

6.2.5 Surveys will follow the methodologies detailed in the guidance below:

- Gilbert, G., Gibbons, D. W. and Evans, J. (1998). Bird Monitoring Methods. RSPB, Sandy;

- Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013) Raptors: a field guide for surveys and monitoring (3rd edition). The Stationery Office, Edinburgh;
- SNH (2007). Black grouse survey methodology; and
- SNH (2014, revised March 2017). Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms.

6.3 Consultation to Date

6.3.1 A Pre-Application Meeting with The Highland Council (THC) and representatives from Scottish Natural Heritage (SNH), Scottish Environmental Protection Agency (SEPA) and the Energy Consents Unit (ECU) was held on 29th May 2019 with a Pre-Application Advice Pack (PAAP) issued on 25th June 2019. Where relevant, comments from the PAAP are noted in the sections below with further detail provided in Appendix 1.1. It should be noted that the advice provided by THC is based on a layout of 41 turbines (i.e. more the twice the number being considered in this Scoping Report). Further details are provided in Section 1.1.4.

6.4 Proposed Scope of Assessment

Proposed Study Area

6.4.1 The EIA Report will consider the following study areas[3]:

- Designated sites – 20km study area (SNH 2016);
- Collision modelling – the results of the flight activity surveys will be used to inform collision modelling. A Collision Risk Analysis Area (CRAA) around the outermost turbines will be created using GIS Delunay triangulation[4] to create a wind farm area which will then be buffered by 500m (as per SNH 2017);
- Scarce breeding birds[5] – 2km study area (SNH 2017) with the exception of golden eagle (6km, SNH 2017);
- Black grouse – 1.5km study area (SNH 2017);
- Breeding upland waders and wintering waders, raptors, owls and wildfowl – 500m study area (SNH 2017);

[3] Please note 'survey area' is defined as the area covered by each survey type at the time of survey whereas 'study area' is defined as the spatial extent of the consideration of effects on each species at the time of assessment.

[4] Delaunay triangulation is a form of mathematical/computational geometry where a given set of points (in this case the turbine locations) are all joined to create discrete triangles. Further information is available here: https://uk.mathworks.com/help/matlab/math/delaunay-triangulation.html

[5] Scarce breeding birds are those listed on Annex 1 of the EU Birds Directive or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and in the case of the Proposed Development consists of any raptor, owl, grebe or diver species listed on either Annex 1 or Schedule 1.

- Cumulative assessment – as per SNH (2018b), the Natural Heritage Zone (NHZ) level is considered practical and appropriate for breeding species of wider countryside interest; and
- In-combination assessment – required as part of the Habitats Regulations Appraisal (HRA) process, SNH (2016) guidance on SPA connectivity will be consulted to identify an appropriate study area per SPA species scoped in to the assessment.

Desk Study

6.4.2 The following data sources will be consulted as part of the assessment:

- Highland Raptor Study Group (HRSG) – provision of historic raptor nest locations and occupancy;
- Royal Society for the Protection of Birds (RSPB) – provision of Slavonian grebe breeding loch historic dataset;
- SNHi Information Service [https://sitelink.nature.scot] for designated sites;
- Bhlaraidh Wind Farm (the Operational Development) EIA Report and associated monitoring; and
- any other relevant Environmental Statements/EIA Reports or technical reports from other developments or proposed developments in the local area.

Assessment Method

6.4.3 The assessment method will follow the process set out in the relevant provisions of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations') and guidance on implementation of the Birds and Habitats Directive (SERAD 2000 and SNH 2018c).

6.4.4 The ways in which birds may be affected (directly or indirectly) by the construction, operation and decommissioning of the Proposed Development are:

- Direct habitat loss through construction of the wind farm (e.g. turbine bases, tracks etc.).
- Indirect habitat loss due to birds avoiding the wind farm and its surrounding area. This may occur as a result of disturbance during construction and decommissioning, and maintenance and increased visitor disturbance during operation.
- Habitat modification due to associated changes in land cover (e.g. tree felling or effects on hydrology leading to altered suitability for foraging, breeding, etc).
- Barrier effects in which birds avoid the wind farm and are therefore forced to take alternative routes to feeding or roosting grounds.
- Death or injury through collision with turbine blades, overhead wires (if any), met masts, or fences (if any) associated with the wind farm.
- Any of the above effects acting cumulatively with those from other wind farm plans and projects (i.e. operational or consented developments and those currently in the planning process).

Methodology for Assessing Ornithological Features

6.4.5 The EIA Report will include an Ornithological Impact Assessment (OIA). This will consider the potential direct, indirect and cumulative effects that the construction and operation of the Proposed Development could have on ornithology. It will also consider the potential effects on statutory designated sites. The OIA will be supported by a technical appendix that will include all outputs from any collision modelling.

6.4.6 Effects on potential Important Ornithological Features (IOFs) (excluding SPAs but including Sites of Special Scientific Interest, SSSIs) will be assessed in relation to the species' reference population, conservation status, range and distribution. The assessment of potential effects will follow guidelines published by CIEEM (2018) and SNH (2017, 2018a).

6.4.7 The assessment involves the following process:

- identification of the potential effects of the Proposed Development;
- consideration of the likelihood of occurrence of potential effects where appropriate;
- defining the Nature Conservation Importance (NCI) and conservation status of the bird populations present to determine overall sensitivity;
- establishing the magnitude of the effect (both spatial and temporal);
- based on the above information, a judgement is made as to whether or not the identified effect is significant with respect to the EIA Regulations;
- if a potential effect is determined to be significant, measures to mitigate or compensate the effect are suggested where required;
- opportunities for enhancement are considered where appropriate; and
- residual effects after mitigation, compensation or enhancement are reported.

6.4.8 NCI is defined on the basis of the geographic scale (e.g. NHZ), and it is necessary to consider alongside each feature's conservation status, its distribution and its population trend based on available historic records, to provide an overall level of sensitivity.

6.4.9 The significance of potential effects is determined by integrating the sensitivity and magnitude in a reasoned way.

6.4.10 A set of pre-defined significance criteria will be used in assessing the potential effects of the Proposed Development. It is necessary to establish whether there will be any effects which will be sufficient to adversely affect the feature to the extent that its conservation status deteriorates above and beyond that which would be expected should baseline conditions remain (i.e. the 'do nothing' scenario).

Cumulative Effects

6.4.11 An assessment of cumulative effects will be undertaken following published guidance (SNH 2018b). Cumulative effects on each feature relevant to this Proposed Development will be assessed in relation to other projects and activities subject to the EIA process within a relevant search area, and their effects on a relevant reference population; for example, at a NHZ level for breeding species.

Species Scoped Out of the Assessment

6.4.12 On the basis of experience from relevant studies and policy guidance or standards (e.g. SNH 2018a), the following species are likely to be 'scoped out' since significant effects are unlikely:

- common and/or low conservation species not recognised in statute as requiring special conservation measures, e.g. birds on Annex 1 to the EU Birds Directive[6] or Schedule 1 to the Wildlife & Countryside Act 1981 (as amended);
- common and/or low conservation species not included in non-statutory lists (e.g. Red and Amber-listed BoCC species, Eaton *et al.* 2015), showing birds whose populations are at some risk either generally or in parts of their range; and
- passerine species, not generally considered to be at risk from wind farm developments (SNH 2017, 2018), unless being particularly rare or vulnerable at a national level.

6.5 Baseline Conditions

Designated Sites

6.5.1 There are no statutory designations with ornithological features within the Site. The Proposed Development is within 20km of five SPAs that include ornithological features (**Figure 6.1**):

- Loch Knockie and Nearby Lochs SPA (underpinned by Knockie Lochs SSSI, 6.7km, and Glendoe Lochans SSSI, 15.7km) (**Table 6.1**), 6.7km to the south;
- North Inverness Lochs SPA (underpinned by Balnagrantach SSSI, 13km, and Dubh Lochs SSSI, 7.7km) (**Table 6.2**), 7.7km to the north-west;
- Glen Affric to Strathconon SPA (underpinned by Glen Affric SSSI, 7.7km) (
- **Table** 6.3), 7.9km to the north-west;
- West Inverness-shire Lochs SPA (underpinned by West Inverness-shire Lochs SSSI) (**Table 6.4**), 15.4km to the west and south-west; and
- Loch Ruthven SPA (underpinned by Loch Ruthven SSSI and Ramsar) (**Table 6.5**Table 6.5), 19.7km to the east.

Table 6.1 Qualifying Features of Loch Knockie and Nearby Lochs SPA (underpinned by Knockie Lochs SSSI and Glendoe Lochans SSSI*)

Feature	Qualifying Feature Category	Condition	Description
Slavonian grebe breeding	SPA, SSSIs	Unfavourable no change: July 2002	Population of European importance. Up to six pairs (1992 to 1995), 10% of the GB population.
Common scoter	SSSI*	Favourable maintained: March 2005	Nationally important breeding population of two pairs, representing 4% of British population.

[6] Council Directive 2009/147/EC on the conservation of wild birds (the Birds Directive).

Table 6.2 Qualifying Features of North Inverness Lochs SPA (underpinned by Balnagrantach SSSI and Dubh Lochs SSSI)

Feature	Qualifying Feature Category	Condition	Description
Slavonian grebe breeding	SPA, SSSIs	Favourable maintained: May 2009	Population of European importance. Seven pairs (1991 to 1995), 12% of GB population.

Table 6.3 Qualifying Features of Glen Affric to Strathconon SPA (underpinned by Glen Affric SSSI)

Feature	Qualifying Feature Category	Condition	Description
Golden eagle breeding	SPA	Favourable maintained: October 2010	Population of European importance. Ten active territories in 2003, 2.2% of the GB population.
Breeding bird assemblage	SSSI	Favourable maintained: July 2003	Bird assemblage including pinewood specialists crested tit and Scottish crossbill. Population of black grouse and very low numbers of capercaillie.

Table 6.4 Qualifying Features of West Inverness-shire Lochs SPA (underpinned by West Inverness-shire Lochs SSSI)

Feature	Qualifying Feature Category	Condition	Description
Black-throated diver breeding	SPA, SSSI	Favourable maintained: June 2010	Population of European importance. Average 6.6 pairs (1990 to 2005), 3.4% of the GB maximum estimated population of 189 pairs.
Common scoter breeding	SPA, SSSI	Unfavourable declining: August 2018	Population of European importance. Average 7.8 pairs (1994 to 2000, 2004 to 2005), 8.2% of the GB population of 95 pairs.

Table 6.5 Qualifying Features of Loch Ruthven SPA (underpinned by Loch Ruthven SSSI and Ramsar)

Feature	Qualifying Feature Category	Condition	Description
Slavonian grebe breeding	SPA, SSSI, Ramsar	Favourable maintained: May 2009	Population of European importance. 14 pairs (1988 to 1992), 18.9% of the GB population.
Breeding bird assemblage	SSSI	Favourable maintained: June 2010	Loch supports best assemblage of breeding waterfowl in the Great Glen and is a feeding, roosting and nesting site for 15 species including: little grebe, wigeon, tufted duck, red-breasted merganser, oystercatcher, snipe and curlew.

6.5.2 On the basis of SNH guidance (2016), there is considered to be no potential for connectivity between the Proposed Development and Glen Affric to Strathconon SPA (golden eagle foraging range 6km, SNH 2016). Consequently, effects relating to the Glen Affric to

Strathconon SPA will be scoped out of the OIA and any potential effects relating to golden eagle will be assessed against the regional NHZ population.

6.5.3 On the basis of SNH guidance (2016), there is considered to be no potential for connectivity between the Proposed Development and West Inverness-shire Lochs SPA for black-throated diver (foraging range 10km, SNH 2016). Consequently, effects relating to the West Inverness-shire Lochs SPA will be scoped out of the OIA and any potential effects relating to black-throated diver will be assessed against the regional NHZ population.

6.5.4 The SNH (2016) connectivity guidance does not detail connectivity distances for common scoter or Slavonian grebe. For common scoter, there is considered to be limited potential for connectivity between the Proposed Development and Loch Knockie and Nearby Lochs SPA or West Inverness-shire Lochs SPA as whilst there are potentially suitable waterbodies[7] within the Site, the nearest SPA is 6.7km to the south and common scoter have not been recorded during any surveys undertaken for either the Operational Development (April 2009 to March 2012, 2015, 2018) or the Proposed Development (October 2018 to May 2019). Considering this information, effects relating to either the regional or SPA common scoter population are unlikely to form part of the OIA.

6.5.5 Slavonian grebe have been recorded breeding adjacent to the Proposed Development (approximately 400m and 3.5km to the east of the Proposed Development, refer to **Confidential Appendix 6.1** for detail and **Confidential Figure 6.1.1** for nest locations). A comprehensive review of Slavonian grebe ecology and flight behaviour as part of the Druim Ba Wind Farm Environmental Statement, reported that Slavonian grebe flights during the breeding season were recognised as being typically short (a few hundred metres to a few kilometres). Considering this information, breeding Slavonian grebe ranging distances from the Loch Knockie and Nearby Lochs SPA and North Inverness Lochs SPA are likely to be much lower than the 6.7km and 7.7km respectively between the Proposed Development and these SPAs. It is therefore considered that there is limited to no connectivity between the Proposed Development and Loch Knockie and Nearby Lochs SPA, North Inverness Lochs SPA or Loch Ruthven SPA (or underpinning SSSIs). Consequently, any potential effects relating to Slavonian grebe will be assessed against the regional NHZ population.

6.5.6 Considering the above, effects relating to all SPAs and SSSIs will be scoped out of the OIA. For any of the species listed as features on the SPAs that are recorded during baseline surveys, effects will be assessed against the regional or national populations (as detailed in paragraphs 6.4.3 to 6.4.11). It is noted that the PAAP issued by THC on 25th June noted that there is considered to be connectivity between the North Inverness-shire Lochs SPA and the Proposed Development which at the time of the meeting (and PAAP issue) was 5.9km to north-west. As a result of the changes to the Turbine Development Area (paragraph 1.1.4), the North Inverness-shire Lochs SPA is now 7.7km to the north-west and as outlined in paragraph 6.5.5 any connectivity is considered to be sufficiently unlikely.

[7] Research from the RSPB indicates that common scoter prefer shallow waterbodies with plenty of large freshwater invertebrates: https://www.rspb.org.uk/our-work/conservation/projects/ecology-and-conservation-of-breeding-common-scoters/

Field Surveys

6.5.7 The following ornithology surveys have been undertaken to date (May 2019) for the Proposed Development. The surveys have been undertaken in line with the appropriate guidance (paragraph 6.2.5) and survey areas[3] are detailed below.

- flight activity (Vantage Point, VP) surveys – October 2018 to May 2019;
- scarce breeding bird[5] surveys, 2km survey area – February to May 2019;
- black grouse surveys, 1.5km survey area – April and May 2019;
- upland breeding bird surveys, 500m survey area – April to May 2019; and
- winter walkover surveys, 500m survey area – November and December 2018 and February 2019.

6.5.8 The following surveys will be completed between June and August 2019, following relevant guidance (paragraph 6.2.5):

- flight activity (VP) surveys – June to August 2019;
- scarce breeding bird surveys, 2km survey area – June to August 2019; and
- upland breeding bird surveys, 500m survey area – June and July 2019.

Ornithological Activity

6.5.9 The sections below detail the results of the baseline surveys undertaken for the Proposed Development between October 2018 and May 2019. In addition, the results of the baseline surveys (April 2009 to March 2012, which included the area that is now the Proposed Development) and the 2015 pre-commencement/2018 post-construction surveys from the Operational Development are provided in relevant sections below.

Black Grouse

6.5.10 Black grouse were located lekking at four locations within the 1.5km survey area during the 2019 baseline surveys for the Proposed Development (

6.5.11 **Table 6.6, Figure 6.2**). Of these, Lek 1 was the most frequently used and also the largest lek located during surveys.

Table 6.6 Summary of Black Grouse Lek Activity 2011, 2015, 2018 and 2019

<table>
<tr><th rowspan="2">Lek ID</th><th colspan="8">Annual Maximum Count</th></tr>
<tr><th>2011 No. Males</th><th>2011 No. Females</th><th>2015 No. Males</th><th>2015 No. Females</th><th>2018 No. Males</th><th>2018 No. Females</th><th>2019 No. Males</th><th>2019 No. Females</th></tr>
<tr><td>1 (AB)</td><td>7</td><td>1</td><td>13</td><td>6</td><td>7</td><td>0</td><td>10</td><td>2</td></tr>
<tr><td>2 (AA)</td><td>1</td><td>0</td><td colspan="4" rowspan="5">Outwith Operational Development survey area for pre-commencement and and post-construction surveys.</td><td>3</td><td>0</td></tr>
<tr><td>3 (Z)</td><td>1</td><td>0</td><td>4</td><td>0</td></tr>
<tr><td>4 (X)</td><td>3</td><td>1</td><td>6</td><td>0</td></tr>
<tr><td>(Y)</td><td>18</td><td>1</td><td colspan="2" rowspan="3">Outwith Proposed Development study area.</td></tr>
<tr><td>(W)</td><td>4</td><td>0</td></tr>
<tr><td>(AD)</td><td>2</td><td>4</td><td>2</td><td>0</td><td>4</td><td>2</td></tr>
</table>

6.5.12 Baseline surveys for the Operational Development in 2011 identified four black grouse leks that are also within the Proposed Development 1.5km survey area (2011 lek IDs are noted in parenthesis in

6.5.13 **Table** 6.6 and shown on **Appendix 6.2 Figure 9.18**). Black grouse were recorded lekking at these four leks during the 2019 baseline surveys for the Proposed Development (leks 1 to 4,

6.5.14 **Table** 6.6) with a female recorded feeding near lek W. Targeted monitoring for the Operational Development also recorded continued black grouse presence at lek 1 (AB) and lek AD (

6.5.15 **Table** 6.6).

6.5.16 Whilst the total number of males in attendance at these leks has varied between survey years, birds have continued to be present at all the known lek areas situated within the relevant survey area for each survey year, including 2019. Consequently, there is considered to be adequate baseline data available to undertake an OIA for black grouse within 1.5km of the Proposed Development and no further surveys for lekking black grouse are proposed.

Scarce Breeding Birds

6.5.17 To date (May 2019), Slavonian grebe is the only target species that has been confirmed to be breeding within the 2km survey area (refer to **Confidential Appendix 6.1** for detail and **Confidential Figure 6.1.1** for nest locations). Surveys between June and August 2019 will continue to monitor these breeding attempts to confirm hatching/fledging success.

6.5.18 A pair of golden eagles have also been confirmed to be holding a territory within the 6km survey area, however there has been no evidence of successful breeding (as was the case during 2009-2011 baseline surveys for the Operational Development). Surveys during the 2019 breeding season have located four eyries considered to be part of the same territory (**Table 6.7**). Please refer to **Confidential Appendix 6.1** for detail and **Confidential Figure 6.1.2** for nest locations. Surveys between June and August 2019 will continue to monitor these eyries and golden eagle activity within the survey area.

Table 6.7 Status of Golden Eagle Eyries 2019

Nest ID	Summary of Field Notes (as of May 2019)
EA_1.1	Golden eagle observed around this area across the winter/early breeding season and potential nest located (confirmed by Forestry Commission Scotland). No signs of breeding activity at nest/no obvious nest structures.
EA_1.2	Known historic nest site, large deep nest. One fresh pine branch on nest but no other recent signs.
EA_1.3	New nest ledge located. Golden eagle feathers on surrounding ledge, some fresh splash. Nest lined with dry grass. Plucked grouse (possible female black grouse) on ledge by nest. Considered to be the most active nest/the favoured nest within the territory.
EA_1.4	New nest ledge located. Not much material, some old heather placed in circular fashion. Old splash (not a lot). One old feather - no sign of recent refurbishment or use.

6.5.19 Black-throated diver and red-throated diver have been recorded on lochans within the 2km survey area (**Confidential Figure 6.1.1**), however as the core breeding period for divers is considered to be between mid-May and early July (Gilbert *et al.* 1998) it is too early to be able to determine whether any breeding attempts have taken place. Surveys between June and August 2019 will continue to monitor these lochans for evidence of breeding divers.

6.5.20 To date (May 2019), the following species have been recorded infrequently, with no evidence of breeding attempts within the 2km survey area:

- White-tailed eagle – a pair was recorded flying through the survey area on 21st March and 2nd May 2019;
- Red kite – a single bird was recorded in the south of the survey area on the 11th February, 11th March and 24th April 2019;
- Osprey – a single bird was recorded in the north of the survey area on 18th April 2019;
- Merlin – a single bird was recorded in the east of the survey area on 25th March (briefly mobbing golden eagle[8]) and 23rd April 2019; and
- Peregrine falcon – a single bird was recorded hunting during winter walkover surveys on 19th December 2018.

6.5.21 Overall, Schedule 1/Annex I breeding species' presence is considered to be similar between the baseline data gathered between 2009 and 2011 for the Operational Development and the baseline data gathered to date (October 2018 to May 2019) for the Proposed Development with:

- Slavonian grebe identified to be breeding in a similar density and distribution (one to two pairs to the east of the Proposed Development);
- a non-breeding pair of golden eagle continuing to hold a territory to the east of the Operational and Proposed Developments; and
- black-throated diver and red-throated diver continue to be present in a similar density and distribution with birds recorded on the same lochans (although breeding attempts yet to be identified for the 2019 surveys, paragraph 6.5.19).

6.5.22 Consequently, there is considered to be adequate baseline data available[9] to undertake an OIA for breeding Schedule 1/Annex I raptors/diver within 2km of the Proposed Development and no further surveys for scarce breeding birds are proposed.

Breeding Waders

6.5.23 To date (May 2019), only two of the four scheduled breeding bird survey visits haven been undertaken with the remaining two scheduled for June and July 2019. A provisional assessment of the results of the first two visits indicate that common sandpiper, golden plover, greenshank and snipe are likely to be breeding within the 500m survey area. A completed assessment of the estimate number of breeding territories (minimum and maximum) for all breeding waders recorded during surveys will be undertaken following completion of the final survey visit in July 2019.

6.5.24 Baseline surveys for the Operational Development in 2011 identified breeding greenshank (**Appendix 6.2 Figure 9.53** to **Figure 9.55**), golden plover and dunlin (**Appendix C6.1 Figure 9.46** to **Figure 9.52**). Targeted monitoring for the Operational Development recorded

[8] This is potentially evidence of merlin territory in the vicinity, however no further evidence of breeding merlin has been recorded.

[9] Especially considering the proposal to gather further baseline data from organisations such as the HRSG and RSPB.

breeding golden plover, dunlin and greenshank during 2015 pre-commencement surveys (**Appendix 6.2 Figure 1**) and breeding common sandpiper, dunlin, golden plover, greenshank and snipe during the 2018 post-construction surveys (**Appendix 6.2 Figure 2.4**).

6.5.25 Considering that the breeding wader assemblage recorded during surveys in 2009, 2010, 2011, 2015, 2018 and 2019 has remained similar with the target species of golden plover and greenshank recorded each survey year in similar distributions[10], there is considered to be adequate baseline data available to undertake an OIA for breeding waders within 500m of the Proposed Development and no further surveys for breeding waders are proposed.

Flight Activity Surveys

6.5.26 Flight activity surveys were originally undertaken from five VPs that were selected when baseline surveys at the Proposed Development commenced in October 2018 with a sixth VP (VP 6) added from February 2019 to monitor potential golden eagle breeding flight activity on the eastern extent of the Site (**Figure 6.3**). In mid-June 2019, the Site was revised and as a result VPs 2 and 5 have been dropped[11] and VP 4 has been rotated (will become VP 7 for collision modelling purposes) to provide the best coverage of the revised Turbine Development Area (**Figure 6.4**). **Table 6.8** details the completed survey hours to date (May 2019).

Table 6.8 Summary of Flight Activity Survey Hours Undertaken between October 2018 and May 2019

Season	VP 1	VP 2	VP 3	VP 4	VP 5	VP 6
2018/2019 non-breeding season (October 2018 to mid-March 2019)	36	39	39	36	36	25.5
2019 breeding season (mid-March to May 2019[12])	18	18	18.5	18	18	18

6.5.27 Ten target species have been recorded to date (May 2019), collectively accounting for 76 flightlines, of which 71 flightlines were recorded at Potential Collision Height (PCH)[13] and would therefore potentially be involved in any collision risk modelling. **Table 6.9** details the species recorded. Black-throated diver, red-throated diver and golden eagle flight activity is shown on **Confidential Figure 6.1.1** and **Confidential Figure 6.1.2** respectively with all other target species flight activity detailed on **Figure 6.5**.

Table 6.9 Summary of Target Species Recorded During Flight Activity Surveys, October 2018 to May 2019

Species	Total Number of Flightlines Recorded	Total Number of Birds Recorded	Total Bird Seconds Recorded	Total Bird Seconds Recorded at PCH
Black-throated diver	1	1	187	157
Golden eagle	58	69	13,795	10,103
Goshawk	1	1	45	30

[10] Dunlin were recorded during 2009-2011, 2015 and 2018 surveys for the Operational Development however these areas are not within the 500m study area for the Proposed Development.

[11] The associated 2km viewsheds of these VPs now no longer cover the Proposed Development.

[12] A minimum of 36 hours at each VP location will be completed by 31st August 2017.

[13] For the purposes of the EIA Scoping Report, PCH, relating to the height of the turbine blades is considered to be between 30-180m above ground level.

Species	Total Number of Flightlines Recorded	Total Number of Birds Recorded	Total Bird Seconds Recorded	Total Bird Seconds Recorded at PCH
Greylag goose	2	8	834	387
Osprey	2	2	1,130	799
Peregrine falcon	2	2	326	289
Pink-footed goose	1	28	4,228	1,268
Red kite	2	2	160	118
Red-throated diver	2	3	643	427
White-tailed eagle	5	9	3,174	1,513

6.5.28 Baseline flight activity surveys for the Operational Development between April 2009 to March 2012 recorded: *black grouse*, black-throated diver, common crane, dunlin, golden eagle, golden plover, goshawk, *greenshank*, greylag goose, hen harrier, *merlin*, osprey, peregrine falcon, pink-footed goose, red-throated diver, short-eared owl, white-tailed eagle and whooper swan (species underlined were also recorded during flight activity surveys between October 2018 and May 2019 and species in *italics* have been recorded during other non-VP baseline surveys between October 2018 and May 2019). Overall, the species recorded during flight activity surveys, and their associated breeding status, have remained broadly similar (with those key breeding species continuing to be recorded during flight activity surveys) and consequently the data gathered from baseline flight activity surveys from October 2018 to August 2019 is considered to present a representative sample of flight activity behaviour at the Proposed Development. It is therefore proposed to undertake collision modelling for the Proposed Development using the baseline data gathered between October 2018 and August 2019.

6.6 Potential Effects

6.6.1 In addition to the collision modelling detailed above, further modelling/additional assessment to aid the assessment of potential effects will be considered where required for any IOFs. This may include (but is not limited to):

- assessment of Slavonian grebe theoretical collision risk;
- Predicted Aquila Territory (PAT) modelling and/or Golden Eagle Territory (GET) modelling for golden eagle; and
- golden eagle population modelling.

Construction Impacts and effects

6.6.2 Based on the available information to date from baseline surveys and the preliminary results from the desk-based study, the following construction and decommissioning effects are likely to be assessed:

- habitat loss/alteration/fragmentation associated with the Proposed Development site, including loss of nesting habitat for target species (breeding raptors, divers, owls, black grouse, waders, Slavonian grebe); and
- disturbance to target species (breeding raptors, divers, owls, black grouse, waders, Slavonian grebe) associated with construction/decommissioning activities.

Operational Impacts and Effects

6.6.3 Based on the available information to date from baseline surveys and the preliminary results from the desk-based study, the following operational effects are likely to be assessed:

- displacement of target species (breeding raptors, owls, black grouse, waders) around operational turbines; and
- potential collision risks associated with operational turbines for target species (most likely to be wildfowl, raptors and waders).

6.7 Potential Mitigation

6.7.1 Potentially significant effects upon birds will be avoided/minimised where possible within the design process. Good practice during construction and operation of the Proposed Development will also be implemented.

6.7.2 Where unmitigated likely significant effects on IOFs are identified, measures to prevent, reduce and where possible offset these adverse effects will be proposed.

6.7.3 A Breeding Bird Protection Plan (BBPP), will be produced to ensure that during construction, all reasonable precautions are taken to ensure the relevant wildlife legislation is adhered to.

6.7.4 Standard good practice (SNH 2015) measures will be applied to minimise any potential effects on any breeding black grouse within up to 750m of the Proposed Development and/or breeding Schedule 1/Annex 1 species within up to 1km of the Proposed Development, including appropriate mitigation/monitoring and license application/consultation with SNH. This would include (but is not limited to):

- Black grouse:
  - reasonable precautions are taken to ensure disruption to lekking black grouse is minimised by, for example, where possible, works within up to 750m of the lek areas will be undertaken outwith the black grouse breeding season (April and May); and
  - restrictions on any works undertaken within 750m of the lek locations during April and May, in the hours around dusk and dawn.
- Breeding Schedule 1/Annex 1 species:
  - checks for breeding activity by a suitably qualified ornithologist prior to works undertaken between February and July;
  - appropriate buffers applied to any breeding attempts located; and
  - additional mitigation measures dependent on the outcomes of a risk assessment and site-specific conditions e.g. reduced speed limits and personnel to remain in vehicles along identified sections of tracks.

6.8 Questions

6.8.1 **Do consultees agree that there is no potential for connectivity between Loch Knockie and Nearby Lochs SPA, North Inverness Lochs SPA, Glen Affric to Strathconon SPA, West Inverness-shire Lochs SPA and Loch Ruthven SPA and that consequently effects related to all designated sites (including SSSIs) can be scoped out of the assessment?**

- **Refer to paragraphs 6.5.2 to 6.5.6.**

6.8.2 **Do consultees agree that the range of surveys carried out to date (May 2019), the remaining proposed surveys (June to August 2019) and the proposal to undertake a year of baseline surveys for the Proposed Development considering the historic data available from the Operational Development and other sources is sufficient and appropriate for ornithology assessment purposes?**

- **Refer to paragraph 6.5.7 and 6.5.8, paragraph 6.5.16, paragraph 6.5.22, paragraph 6.5.25 and paragraph 6.5.28.**

6.8.3 **Are there any other relevant consultees who should be contacted, or other information sources to be referenced, with respect to the ornithology assessment?**

- **Refer to paragraph 6.4.2.**

6.8.4 **Do consultees believe that there are further species which need to be considered in the assessment?**

6.8.5 **Confirmation that the low conservation value species can be scoped out of the assessment is requested.**

- **Refer to paragraph 6.4.12.**

6.8.6 **Do consultees agree that the proposed mitigation is appropriate?**

- **Refer to paragraphs 6.7.1 to** Error! Reference source not found.**.**

7 Archaeology and Cultural Heritage

7.1 Introduction

7.1.1 This section will assess the potential effects arising from the Proposed Development with respect to archaeology and cultural heritage.

7.2 Consultation to Date

7.2.1 Pre-application consultation was undertaken in the form of The Highland Council's Pre-Application Meeting (THC PAM)**.** This consultation was based on a layout of 41 turbines (i.e. more the twice the number being considered in this Scoping Report). Further details on these changes are provided in Section 1.1.4.

7.2.2 The Pre-Application advice is summarised below, with the full response available in Appendix 1.1.

Historic Environment Scotland

7.2.3 Historic Environment Scotland (HES) stated that:

- "there are no scheduled monuments, category A listed buildings, inventory gardens and designed landscapes, or inventory battlefields within the development site."
- "Given the distance between the development site and historic assets within our remit that have particularly sensitive settings, it is likely that any impact on the setting of these assets will not raise issues of national significance. However, we

expect a thorough consideration of the impacts on the two scheduled monuments [Levishie Cottage & Urquhart Castle] noted in our response."

7.2.4 HES also recommended that viewpoints 7 and 17 from the Operational Development are used to assess the Proposed Development and inform mitigation if appropriate.

THC Historic Environment Team (HET)

7.2.5 HET identified a few features of historic interest within THC PAM boundary, all of which lie out with the Scoping boundary. Appendix 1.2 provides a figure illustrating both boundaries.

7.2.6 HET concluded that *"overall, direct impacts to cultural heritage are not envisaged to be a significant constraint in this case. There are, however, a number of important historic features in the wider area that may have their setting adversely impacted by a development in the location proposed."*

7.2.7 HET requested that the assessment includes a targeted walkover, considers potential direct and indirect impacts and that the indirect impact assessment includes a study of cumulative impacts. Where indirect impacts are predicted, these will be illustrated using photomontages. Where impacts are unavoidable, HET expect proposed methods to mitigate this impact to be discussed in detail.

7.3 Proposed Scope of Assessment

Direct Impacts

7.3.1 Informed by the results of a desk study, a targeted site walkover survey was undertaken by an archaeologist for the Operational Development in November 2011. The targeted site walkover, which covered the entirety of the Site of the Proposed Development, identified no direct effects on known heritage assets and assessed the potential for unknown archaeological remains to be low.

7.3.2 In addition, pre-application consultation with HES and HET raised no concerns over direct impacts, with the latter stating, "*direct impacts to cultural heritage are not envisaged to be a significant constraint in this case".*

7.3.3 Consequently, it is proposed that an assessment of direct impacts is scoped out of the EIA.

Indirect Impacts

7.3.4 An evaluation of the potential indirect impacts on scheduled monuments, category A listed buildings and inventory gardens and designed landscapes will be undertaken if ZTV analysis demonstrates potential impact.

7.3.5 The potential indirect impacts on the two scheduled monuments (Levishie Cottage & Urquhart Castle) noted in HES pre-application consultation response will be assessed, with Viewpoints 7 (updated see Table 8.1) and 17 from the Operational Development utilised to assess the Proposed Development and inform mitigation if appropriate.

7.4 Potential Mitigation

7.4.1 Impacts on identified cultural heritage sites will be avoided or minimised where possible through the careful design of the Proposed Development.

7.5 Questions

7.5.1 **Do you agree that it is appropriate to scope out an assessment of direct impacts (including additional site walkover) from the EIA?**

7.5.2 **Are there any additional assets that you would like to be included in the assessment of indirect impact?**

7.5.3 **Do you agree that the scope of the proposed assessment is appropriate?**

8 Landscape and Visual

8.1 Introduction

8.1.1 The LVIA will assess the potential for effects on landscape resource and visual amenity as a result of the Proposed Development. The assessment will assess all aspects of the development, as described in Section 3.

8.2 Guidance

8.2.1 The LVIA will be prepared with reference to the following:

- Guidelines for Landscape and Visual Impact Assessment, 3rd edition (LI and IEMA, 2013);
- Visual Representation of Windfarms, Version 2.2 (SNH, 2017a);
- Visualisation Standards for Wind Energy Developments (THC, 2016a)
- Siting and Designing Windfarms in the Landscape (SNH, 2017b);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, 2012);
- Assessing the Impacts on Wild Land Interim Guidance Note (SNH, 2007);
- Assessing Impacts on Wild Land Areas – Technical Guidance (Consultative Draft) (SNH, 2017c);
- Assessment of Highland Special Landscape Areas (THC, 2011);
- The Special Qualities of the National Scenic Areas, SNH Commissioned Report No. 374 (SNH, 2010); and
- Onshore Wind Energy Supplementary Guidance (THC, 2016b), in particular pages 18-20 and the Loch Ness Landscape Sensitivity Study.

8.3 Consultation to Date

8.3.1 A Pre-Application Meeting (PAM) was held on 29th May 2019 and a Pre-Application Advice Pack (PAAP) received on 25th June 2019, see Appendix 1.1. This consultation was based on a layout of 41 turbines (i.e. more than twice the number being considered in this Scoping Report). Further details on these changes are provided in Section 1.1.4.

8.3.2 The PAAP identifies the following issues of relevance to the LVIA:

- request for assessment of all aspects of the development, not just the turbines;
- notes the previously secured mitigation and modifications to the Operational Development which reduced visual effects, particularly in the vicinity of Loch Ness;
- need for **mitigation** to be identified through the design and assessment process;
- importance of explaining **design iterations** and how they have responded to the assessment of impacts;
- request for careful consideration of turbine **scale**, including the potential for turbines of different heights, and associated relationship with other wind energy developments and landscape features;
- request for identification of cumulative effects and consideration of existing pattern of wind energy development, particularly in the vicinity of Loch Ness;
- requirement to use up-to-date **cumulative wind energy development data**, using the THC (January 2019) dataset as a starting point;
- request for identification of potential for effects on the setting of **Loch Ness and other sensitive locations**, including **key views** highlighted in the *Onshore Wind Energy Supplementary Guidance* (THC, 2016b), including Viewpoints from the Operational Development LVIA;
- suggestion of additional **views and outlooks from key routes** to cover in the LVIA;
- request for identification of potential for areas of **new visibility**, when compared to the visibility of the Operational Development;
- request for identification of potential for effects on the qualities of **wild land** and surrounding **National Scenic Areas**;
- request for identification of potential for increased visual effects resulting from the **scale** of the proposed turbines and consideration of potential variety of turbines sizes and rotations speeds which may be visible;
- request for the preparation of **visualisations** to THC (2016a) guidance *Visualisation Standards for Wind Energy Development;*
- request for the use of the recently refreshed and published SNH (2019) **Landscape Character Assessments**, as a starting point in the landscape assessment;
- request for the consideration of **ten landscape and visual criteria** set out in the *Onshore Wind Energy Supplementary Guidance* (THC, 2016b) in the design and assessment of the Proposed Development;
- request for the consideration of guidance for area LN10 and adjacent Landscape Character Areas, as described in the **Loch Ness landscape sensitivity appraisal** in the *Onshore Wind Energy Supplementary Guidance* (THC, 2016b), in the design and assessment of the Proposed Development;
- request for regard to be paid to the relevant **Special Landscape Area citations** which summarise key characteristics, qualities, sensitivities and measures for enhancement;

- requirement to consider **night time visibility** including any additional requirement for lighting which may involve an aviation lighting assessment; and
- suggested inclusion of **additional routes and summits** in the visual assessment, including Glas Bheinn Mhor, high and low level routes of the Great Glen Way, Great Glen Canoe Trail, South Loch Ness Trail/ Loch Ness 360, the route up Meall Fuar-Mhonaidh, and Rights of Way.

8.3.3 Although the PAAP is based on a superseded layout, its comments have been noted and will be taken into consideration in the evolution of the design and assessment of potential effects on landscape character and visual amenity.

8.3.4 From a landscape and visual perspective, it is also noted that the development of the 20 turbine Scoping layout is successful in reducing a number of the potential landscape and visual effects associated with the 41 turbine Pre-Application layout.

8.4 Proposed Scope of Assessment

8.4.1 An LVIA will be undertaken in accordance with the 3rd Edition of the Guidelines for Landscape and Visual Impact Assessment (Landscape Institute and IEMA, 2013).

8.4.2 A Zone of Theoretical Visibility (ZTV) will be used to inform the LVIA. For reference, an indicative ZTV has been included in this Scoping Report (see Figure 8.1). This has been based on an indicative design representative of 20 turbines at 180m tip height.

8.4.3 The key aspects of the LVIA are set out below.

Study Area

8.4.4 A study area of 45km from the outer turbines is proposed to assess the relationship between the Proposed Development and the wider area in terms of potential significant effects on landscape character and visual amenity. This is in line with SNH (2017a) guidance for turbines with a maximum tip height of over 150m. The maximum tip height of turbines under consideration would be 180m. If smaller turbines are chosen, the study area radius may change, in line with SNH (2017a) guidance and a review of the ZTV and baseline landscape and visual context.

8.4.5 For the purpose of identifying, mapping and assessing the likely significant effects of the Proposed Development on the landscape of the Site and its immediate surroundings, a 'detailed study area' from the outer turbines will be defined. This detailed study area will be informed through on-going assessment work, but is likely to be around 20km.

Landscape Assessment

8.4.6 The landscape assessment will include consideration of all designated landscapes within the LVIA Study Area. This will include an assessment of effects on the special qualities of the landscape designations, including the Glen Affric NSA. More detailed assessment of effects on Landscape Character Types (LCTs) will be undertaken within the detailed study area. The SNH (2019) Landscape Character Assessments (LCAs) will be consulted as a starting point in defining the baseline landscape context. ZTVs and field reconnaissance would inform our understanding of the likelihood for significant effects to occur and those areas considered very unlikely to be significantly affected would be scoped out of further assessment. Full justification would be provided for those areas scoped out.

Wild Land Assessment

8.4.7 The Proposed Development is not located within a Wild Land Area (WLA) but has the potential to indirectly affect wild land due to potential intervisibility with turbines from WLAs. However, it is likely that the extent of this intervisiblity would be largely limited to areas already affected by the Operational Development. The likely extent of potential effects on wild land will be confirmed once the layout of the Proposed Development and turbine dimensions has been confirmed. It is proposed that assessment of effects on WLAs will form a part of the main LVIA chapter rather than a stand-alone report. This will include consideration of how the landscape effects of the Proposed Development may alter the wildness attributes of WLA 24 (Central Highlands), WLA 19 (Braeroy - Glenshirra – Creag Meagaidh) and WLA 20 (Monadhliath) and a review of how / whether each of the key qualities outlined in the Wild Land Descriptions would be affected. This is a similar approach to that taken for the Operational Development LVIA, agreed through pre-application consultation, whereby a *"specific assessment of effects on wild land will not be included in the LVIA, and wild land characteristics will be taken into consideration in the landscape character assessment"* (OPEN, 2012: p5 of Ch.8). The potential for significant wild land effects to occur on other WLAs within the LVIA Study Area is considered unlikely.

8.4.8 The assessment will take into account the latest guidance from SNH (2017c) on the assessment of effects on WLAs.

Visual Assessment

8.4.9 The visual assessment will be based on an assessment of potential effects for receptors in settlement areas, on routes (including roads, Core Paths and other walking routes), and at recreational attractions within the detailed study area, where potential visibility is indicated by the ZTV.

8.4.10 The visual assessment will also assess potential effects on receptors at a series of viewpoints (VPs) which are considered to accurately represent the types of views experienced by receptors within the LVIA Study Area. It is proposed that many of the VPs assessed as part of the Operational Development ES (2012) are used in the assessment for the Proposed Development. These VPs were previously agreed in consultation with THC, SNH and the Cairngorms National Park Authority (CNPA). In addition, new VPs have been identified to illustrate new areas of potential visibility and will be used to inform the turbine layout and help avoid, reduce or offset adverse visual effects of the Proposed Development.

8.4.11 The majority of VPs are anticipated to be within 20km of the Proposed Development, but the selection process would allow for a variety of key VPs throughout the study area to be identified for consideration. The proposed list of eighteen VP locations is detailed in Table 8.1 below and VP locations are shown on Figure 8.1.

Table 8.1: Proposed Viewpoint List

VP No.	Location	OS Grid Reference	Reason for Selection / Exclusion
VP1	Track to Loch Liath	235065, 818396	Illustrative of open, very close-proximity view, from track on the Site. [VP1 in the Operational Development LVIA]

VP No.	Location	OS Grid Reference	Reason for Selection / Exclusion
VP2 (updated)	Old Bridge, Invermoriston	241968, 816573	Representative of close-proximity views from Invermoriston, taken from Old Bridge [Close to VP2 in Operational Development LVIA, but more representative]
VP3	Meall Fuar-mhonaidh	245685, 822183	Illustrative of elevated views from popular local hill summit on the north-western side of Loch Ness, within Loch Ness and Duntelchaig SLA. [VP3 in Operational Development LVIA]
VP 4 (new)	A833 above Milton	249836, 832259	Illustrative of new visibility, representative of elevated views from the A833 above Milton. [New VP requested in PAAP from A833 above Milton.]
VP5	Suidhe Viewpoint, B862	244965, 810550	Illustrative of elevated view from roadside Viewpoint marked on OS maps, on General Wade's military road, within Loch Ness and Duntelchaig SLA. [VP5 in Operational Development LVIA]
VP6	B862 south of Foyers	249744, 817318	Illustrative of views from the B862 road opposite the Site. [VP6 in Operational Development LVIA]
VP7 (updated)	Lochside picnic layby on B852	258078, 832144	Illustrative of worst-case low-level views from shores of Loch Ness, on B-road, within Loch Ness and Duntelchaig SLA. [Close to VP7 in Operational Development LVIA]
VP 8 (new)	Core Path north of Loch Affric	214824, 822851	**Illustrative of views from core path to the north of Loch Affric, at junction with mountain track, situated within Glen Affric NSA and Central Highlands WLA.** [New VP requested in PAAP from route along north side of Loch Affric within NSA]
VP9	Carn na Saobhaidhe	259930, 814395	Illustrative of elevated views from popular corbett summit on southern side of Loch Ness. [VP9 Operational Development LVIA]
VP10	Great Glen Way	256115, 839076	Illustrative of elevated views from the Great Glen Way. [VP10 in Operational Development LVIA]
VP11	Meall Mor, Glen Affric	224908, 828076	Illustrative of elevated views from local high point within Central Highlands WLA, on northern boundary of the Glen Affric NSA and southern boundary of the Monar and Mullardoch SLA. [VP11 in Operational Development LVIA]
VP12	Creag Dhubh	222756, 821621	Illustrative of elevated view from hilltop within WLA, with views north across Glen Affric NSA. [VP12 in Operational Development LVIA]

VP No.	Location	OS Grid Reference	Reason for Selection / Exclusion
VP13	Carn Ghluasaid	214586, 812511	Illustrative of elevated view from popular munro summit within Moidart, Morar and Glenshiel SLA and Central Highlands WLA. [VP13 in Operational Development LVIA]
VP14	Meall Dubh	224539, 807889	Illustrative of elevated view from corbett path, by Millenium Wind Farm [VP14 in Operational Development LVIA]
VP15	Poll-gormack Hill	239064, 798038	Illustrative of elevated mid-range views from summit within Braeroy-Glenshirra-Creag Meagadh WLA, with views across the Corrieyarrick Pass. [VP15 in Operational Development LVIA]
VP16	Geal Charn	256144, 798772	Illustrative of elevated views from Munro summit, on western boundary of CNP and near the boundary of the Monadhliath WLA. [VP16 in Operational Development LVIA]
VP17	B862 south of Dores	259372, 832476	Illustrative of elevated view across Loch Ness from minor B-road, within Loch Ness and Duntelchaig SLA. [VP17 in Operational Development LVIA]
VP18	Track near Dun Fhamhair fort	247258, 846682	Illustrative of longer range views from walking route near Beauly. [VP18 in Operational Development LVIA]

8.4.12 Key views to be considered in the LVIA were discussed in the PAAP (page 10):

- A VP to illustrate "Loch Ness West views" from the A82 near the junction of the Great Glen Way in the vicinity of Tychat has not been selected due to screening from roadside trees. Some open views would be experienced from the loch but a VP in this location would not be representative of views from the A82. Effects on receptors on the A82 and Great Glen Way in this area will nevertheless be assessed in the visual assessment.
- A VP on the "A887 in the general vicinity of Dundreggan" has not been selected due to considerable screening from roadside trees. Effects on receptors in this area will nevertheless be assessed in the visual assessment.
- A VP on the "A833 above Milton" has been added, see VP 4.

8.4.13 Other areas of sensitivity were noted in the PAAP to potentially experience impacts as a result of the Proposed Development (page 10 of the PAAP):

- A VP on the "A831 approach to Cannich from Struy" is not included as there is no theoretical visibility from this route.
- A VP from "elevated viewpoints to the north side of Strathglass on the edge of the Glen Strathfarrar NSA" is also not included since effects on the NSA will be assessed in the landscape assessment. Effects on elevated summits in the area are represented by several VPs, including VP 11 and 12, and will be assessed in the visual assessment.

- A VP to illustrate “routes along the north side of Loch Affric and Loch Beinn a’Mheadhoin within the Glen Affric NSA” has been added, see VP 8.

Visualisations

8.4.14 The visual assessment will be supported by a series of photomontages and wireframes from the agreed VP locations.

8.4.15 Visualisations from each VP will be prepared in accordance with best practice guidance (SNH, 2017). In addition, a separate set of visualisations produced to meet THC’s (2016a) standards will be provided.

Lighting

8.4.16 If the Proposed Development includes turbines of 150m to tip height or above, turbine lighting may be required. The design of any turbine lighting would be carefully considered and a night time assessment may be required. SNH and THC would be consulted on the requirements for any night time visualisations.

Cumulative

8.4.17 In line with SNH (2012) guidance, the assessment will consider the potential for cumulative effects with other wind energy developments within a 60km radius including those which are operational / constructed; consented; and those for which an application has been submitted but which are yet to be determined. As a starting point, we have referred to the THC (2019) Highland Wind Map, updated in January 2019.

8.4.18 The list of cumulative wind energy developments will be refined to a more focussed group of cumulative sites, in discussion with THC, which are considered to be most likely to be seen and experienced in combination with the Proposed Development and with potential for significant effects.

8.4.19 The final list of cumulative sites to be included in the assessment would be defined following further assessment and review of cumulative ZTVs. Depending on this review process, this list of cumulative sites for inclusion in the CLVIA may potentially include (but would not be limited to):

- Aberarder (consented), approx. 22km from the Site;
- Beinneun Wind Farm (operational);
- Bhlaraidh Wind Farm (operational);
- Corriegarth Wind Farm (operational);
- Corrimony Wind Farm (operational);
- Dell (application);
- Dunmaglass (operational);
- Glenshero Wind Farm (application);
- Millenium Wind Farm (operational);
- Millenium Wind Farm Extension (consented); and
- Stronelairg Wind Farm (operational).

8.4.20 This initial list is based on the THC (January 2019) dataset, but we would appreciate comments from consultees on potential sites to be included.

8.5 Baseline Conditions

8.5.1 The Proposed Development is located west of Loch Ness and the Great Glen, on an area of high rocky plateau. This open, undulating moorland features several rocky outcrops, small hills, many lochs, lochans, watercourses, areas of bog, tracks, hydroelectric infrastructure and turbines of the operational Bhlaraidh Wind Farm (the 'Operational Development'). There are also several distinctive summits, including Meall Fuar-mhonaidh which slopes steeply down to the Great Glen. To the west, this plateau transitions to a rugged, exposed landscape of large mountains, while to the north and south, there are the wooded glens of Glen Urquhart and Glen Moriston, and to the north, the farmed broad Strathglass valley.

8.5.2 The low lying areas of the glens and river valleys contain the majority of settlement and transport infrastructure. There is very little settlement in higher level areas and land use tends to be limited to grazing (sheep and deer) and country pursuits (e.g. shooting and fishing). Man-made features in the area include transmission towers (particularly those of the Beauly-Denny overhead line) and wind turbines.

Landscape Designations

8.5.3 The Site is not covered by any national or regional landscape policy designations. However, landscape designations and other areas of varying landscape importance are present in the wider area (see Figure 8.2). Within a 20km radius of the Site, these include:

- National Scenic Areas (NSAs): Glen Affric NSA and Glen Strathfarrar NSA;
- Special Landscape Areas (SLAs): The Loch Ness and Duntelchaig SLA, Strathconon Monar and Mullardoch SLA, Moidart, Morar and Glen Shiel SLA and Loch Lochy and Loch Oich SLA; and
- Wild Land Areas (WLAs): The Central Highlands WLA (No. 22), Monadhliath WLA (No. 20), and Braeroy-Glenshirra-Creag Meagaidh WLA (No. 19).

8.5.4 There are other NSAs, SLAs, WLAs and Gardens and Designed Landscapes (GDLs) within the wider area, in addition to the Cairngorm National Park (CNP).

Landscape Character

8.5.5 The Proposed Development is located within the Landscape Character Type (LCT) identified by SNH (2019) as Rocky Moorland Plateau – Inverness (LCT 222). This is a high rocky plateau of open, gently undulating moorland which slopes down to the Great Glen, characterised as Broad Steep-Sided Glen (LCT 225), and Glens Urquhart and Moriston, characterised as Wooded Glen – Inverness (LCT 226). To the west, it merges up into the Rugged Massif (LCT 220).

Visual Amenity

8.5.6 The majority of receptors in the wider area are situated in settlements / buildings and on roads and recreational routes located in the lower-lying areas. Views are often contained and channelled by forestry and landform. From more elevated areas, potential visual receptors are primarily recreational users accessing mountain summits and other elevated routes.

8.6 Potential Effects

8.6.1 Potential effects on landscape and visual amenity will include the following.

Construction Effects

8.6.2 Potential construction effects on landscape and visual amenity which will be considered include:

- temporary effects on landscape character; and
- temporary effects on views.

Operational Effects

8.6.3 Potential operational effects on landscape and visual amenity which will be considered include:

- long term effects on landscape character;
- long term effects on views;
- long term cumulative effects with other wind energy development on landscape character; and
- long term cumulative effects with other wind energy development on views.

8.7 Potential Mitigation

8.7.1 Potential mitigation of landscape and visual effects will be explored and may include mitigation by layout design and /or turbine dimensions where possible.

8.8 Questions

8.8.1 We would appreciate if consultees could please provide guidance relevant to the following questions:

- **Do consultees agree with the list of proposed viewpoints?**
- **Please can consultees provide comments on the list sites to be included in the cumulative assessment?**
- **Do you agree that the scope of the proposed assessment is appropriate?**

9 Hydrology and Hydrogeology

9.1 Introduction

9.1.1 This section will assess the potential effects arising from the Proposed Development on hydrology and hydrogeology receptors i.e. surface water and groundwater.

9.2 Legislation, Policy and Guidance

9.2.1 The following legislation, policies and guidance will be taken into consideration when developing assessment methodologies and mitigation measures:

- The Water Framework Directive (WFD), which has been implemented in Scotland through the Water Environment and Water Services (Scotland) Act 2003 (WEWSA).
- The Groundwater Directive, which is implemented through the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) (as amended), commonly referred to as the CAR Regulations.
- The Water Resources (Scotland) Act 2013.
- The Flood Risk Management (Scotland) Act 2009.
- Relevant policies from the LDP including Policy 63 – Water Environment, Policy 64 – Flood Risk, and Policy 66 – Surface Water Drainage.
- THC Supplementary Guidance: Flood Risk and Drainage Impact Assessment (The Highland Council, 2013).
- SNH, SEPA and Forestry Commission Scotland (2019): Good Practice During Wind Farm Construction.
- SEPA Pollution Prevention Guidance (PPGs) and the emerging replacement series of Guidance for Pollution Prevention (GPPs).
- SEPA Guidance Note 4: Planning advice on wind farm developments, LUPS-GU4 (SEPA, 2017).
- SEPA Guidance Note 31: Guidance on assessing the impacts of development proposals on groundwater abstractions and groundwater dependent terrestrial ecosystems (SEPA, 2017).
- CIRIA C532: 'Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors' (CIRIA, 2001).

9.3 Consultation to Date

9.3.1 Pre-application consultation was undertaken in the form of The Highland Council's Pre-Application Meeting (THC PAM)**.** This consultation was based on a layout of 41 turbines (i.e. more the twice the number being considered in this Scoping Report). Further details on these changes are provided in Section 1.1.4.

9.3.2 The advice relevant to hydrology and hydrogeology, provided in the Pre-Application Advice Pack, is summarised below, with the full response available in Appendix 1.1.

Scottish Natural Heritage (SNH)

9.3.3 SNH has provided the following information:

- A key issue is the potential for impacts on the River Moriston SAC which has connectivity to this proposal.
- The Proposed Development site includes areas of peat, priority peatland habitats and carbon rich soils. An assessment of the impact of this proposal on this resource should be made and the EIA Report should contain details of any mitigation measures which have been incorporated to ensure the protection of the carbon rich soils, deep peat and priority peatland habitats. This is discussed in more detail in Section 10,

however hydrological and hydrological impacts in relation to peat will be an important consideration.

Scottish Environment Protection Agency (SEPA)

9.3.4 SEPA has provided the following information:

- SEPA welcomes the inclusion of a buffer between development and watercourses and assumes a 50m buffer will be used. A further buffer may be appropriate above lochs (as impacts on lochs from sedimentation, should it reach them, could be significant) and where there are steep slopes adjacent to the watercourse.
- Generic advice was provided on information to be submitted in respect of any engineering activities which may have an adverse effect on the water environment, including design of water crossings.
- Generic advice was provided on information to be submitted in respect of potential impacts on Groundwater Dependent Terrestrial Ecosystems (GWDTE) and existing water abstractions/private water supplies, including suitable buffers and risk assessment requirements.
- Generic advice was provided on information to be submitted in respect of any proposed borrow pits, including information on water table depth, proximity to watercourses, and drainage/de-watering management.

THC

9.3.5 THC noted that, "*The applicant will be required to carry out an investigation to identify any private water supplies, including pipework, which may be adversely affected by the development and to submit details of the measures proposed to prevent contamination or physical disruption. Highland Council has some information on known supplies but it is not definitive. An on-site survey will be required*."

9.3.6 With respect to flooding, THC noted that a number of watercourses are located within THC PAM boundary, but that through careful siting of the infrastructure, flood risk from these sources can be avoided. Should any infrastructure be located within close proximity to a watercourse, THC would request that a Flood Risk Assessment is submitted to demonstrate that the development is not at risk from flooding and will not increase flood risk elsewhere.

9.3.7 THC also noted, "*Culverting of watercourses should be avoided unless there is no practical alternative. Any new or upgraded culverts or bridges should be adequately designed to accommodate the 1 in 200 year flows (including a 20% allowance for climate change) to avoid increasing the risk of flooding. Analysis of the impact of any proposed new bridges/crossings should be submitted for review*."

9.3.8 THC requested a Drainage Impact Assessment (DIA) to include details relating to existing field drainage and the management of surface water drainage.

9.3.9 THC noted that a buffer of 50m should be maintained between any development infrastructure and surface watercourses/water bodies.

9.4 Baseline Conditions

9.4.1 The Site features numerous watercourses and water bodies. The largest water body is Loch a' Chrathaich adjacent to the wester site boundary, into which the far western and southwestern site area drains. A series of smaller lochs and lochans are present across the rest of the Site, with complex topography meaning drainage will flow from various high points into these water bodies.

9.4.2 The most substantial surface watercourse is the Allt Saigh, which flows west to east near the southern Turbine Development Area boundary. A dam at Loch a' Mheig is located at the eastern edge of this watercourse, just outside the southeast of the Turbine Development Area boundary. Beyond the dam, Allt Saigh continues to flow east, into Loch Ness approximately 4 km east of the Site. Numerous smaller watercourses and drains flow from local high points and link the water bodies across the Site.

9.4.3 The large majority of the Site area is assessed as not being in hydraulic connectivity to the River Moriston to the south. A roughly east-west trending ridge to the south of the Turbine Development Area boundary separates the Site from the River Moriston. Only the far western and north-western site areas (most of which is within the Operational Development) is considered to drain to Loch a' Chrathaich and from there to the River Moriston.

9.4.4 The 1:50,000 BGS Superficial Geology Map from the BGS Onshore GeoIndex Viewer indicates that superficial cover is absent across the majority of the Site, suggesting that bedrock is at or close to the surface. This is supported by site reconnaissance survey work, during which bedrock outcrops were observed frequently across the Site. From GBS mapping and site reconnaissance, peat is indicated to be present in a number of localised areas across the Site, predominantly within depressions in the landscape or adjacent to water bodies.

9.4.5 The 1:50,000 BGS Bedrock Geology Map from the BGS Onshore GeoIndex Viewer indicates that the solid geology underlying the Site comprises Psammite and interbedded Psammite and Semipelite, all recorded as low productivity aquifer with small amounts of groundwater in near surface weathered zones and secondary fractures. Given the nature of the bedrock geology, any groundwater within peat or other localised superficial deposits is unlikely to be in hydrological connectivity with deeper groundwater. Therefore, whilst habitats indicative of potential groundwater dependence are likely to be identified through NVC survey, it is considered likely that these habitats are indeed rainwater/surface water fed.

9.4.6 A review of the SEPA RBMP Interactive Map indicates that the Site is within a ground 'drinking water protection zone' but is not within a surface 'drinking water protection zone'. The Site is underlain by the Northern Highlands water body which is classified as 'good' in terms of groundwater quality.

9.4.7 A review of the SEPA online Flood Map identifies localised areas of the Site being at risk of surface water and fluvial flooding, largely confined to the immediate proximity of watercourses and water bodies.

9.5 Proposed Scope of Assessment

Desk Based Assessment

9.5.1 A desk-based assessment will be carried out in order to establish the catchment characteristics and baseline hydrogeological conditions beneath the Site.

9.5.2 The desk-based review of baseline information will comprise:

- The determination of site hydrogeology from maps published by the BGS, and any previous site investigation reports which may be available;
- A review of existing sources of data relating to the water regime, including SEPA water quality and flood risk data, Institute of Hydrology hydrometric statistics, discharge consents, abstraction licenses and identification of other water users;
- A review of Private Water Supplies in the area and a risk assessment where necessary; and
- A review of the development proposals and reports from other technical studies being undertaken, including ecology surveys which may identify areas of GWDTE.

9.5.3 Ongoing consultation will be carried out with key organisations including SNH, SEPA and THC.

Site Survey

9.5.4 Site survey work will be undertaken in two phases. A first phase reconnaissance survey has already been carried out, to broadly understand the hydrological and hydrogeological baseline. This included a visual survey of watercourses and water bodies, site topography, and observations on existing drainage.

9.5.5 Once the proposed design is more fully developed, a second stage survey will be undertaken to record key features and characteristics of watercourses and water bodies which may be impacted by the development, including proposed locations where watercourses will require to be crossed.

9.5.6 Close liaison between the project hydrologist and the geologists (see Section 10) and ecologists (see Section 5) will be important to develop a full understanding of the water environment at the Site, interaction with peat and wetland habitats, and suitability of design and mitigation measures.

9.6 Potential Mitigation

9.6.1 Impacts on identified hydrological and hydrogeological receptors will be avoided or minimised where possible through the careful design of the Proposed Development. Specific mitigation to be embedded into the design is likely to include:

- maintaining a buffer of at least 50m around any significant surface watercourses and water bodies (noting that smaller buffers around minor field drains may be considered appropriate in consultation with SEPA);
- avoiding siting infrastructure in areas of elevated flood risk;
- designing water crossings in accordance with relevant guidance and CAR Regulations;
- incorporating suitable drainage design to ensure that discharge rates to the natural surface water network are regulated to a level appropriate to the receiving system and that the receiving water network is not adversely affected by runoff from the Site;
- maintaining appropriate development buffers around identified areas of potential GWDTE (with reference to NVC survey data) and private water supplies, if applicable.

If it is not possible to avoid or buffer potential GWDTE then detailed risk assessment will be undertaken to assess whether such habitats are indeed groundwater dependent or if they could be rainwater/surface water fed, and to stipulate any required mitigation measures; and

- agreement and implementation of a Construction Environmental Management Plan (CEMP) to appropriately control and minimise impacts on the water environment during construction.

9.7 Questions

9.7.1 **Do you agree that most of the Proposed Development site area is not in hydraulic connectivity with the River Moriston?**

9.7.2 **Do you agree that, given the low permeability and anticipated minimal groundwater within the underlying bedrock, the potential for on-site habitats to be groundwater dependent (rather than rainwater/surface-water fed) is low?**

9.7.3 **Do you agree that the scope of the proposed assessment is appropriate?**

10 Geology and Soils

10.1 Introduction

10.1.1 This section describes the baseline conditions at the Site and outlines the potential effects of the Proposed Development on geology and soils, including peat stability. Proposed surveys and assessment methodologies are outlined to develop mitigation measures to prevent or reduce identified potential effects.

10.2 Legislation, Policy and Guidance

10.2.1 The following legislation, policies and guidance will be taken into consideration when developing assessment methodologies and mitigation measures:

- Scottish Government (2017): Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments.
- Scottish Renewables and SEPA (2012): Development on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste.
- Scottish Government (2017): Guidance on Developments on Peatland, Peatland Survey.
- SNH, SEPA and Forestry Commission Scotland (2019): Good Practice During Wind Farm Construction.
- Scottish Government: Calculating Potential Carbon Losses and Savings from Wind Farms on Scottish Peatlands.

10.3 Consultation to Date

10.3.1 A Pre-Application Meeting was held with The Highland Council (THC) on the 29th of May 2019. Advice was then provided in the form of a Pre-Application Advice Pack (Appendix 1.1). This advice is reflected in the proposed scope of assessment detailed below.

10.4 Proposed Scope of Assessment

Desk and Field Survey Method

10.4.1 The proposed study area for geology and soils is defined as the area within the red line boundary (Figure 1.1). The following desk and field-based surveys will be undertaken:

- Review of desk-based information, including available aerial photography.
- A site walkover to inform the EIA report, including peat, geomorphology and borrow pit appraisal.
- Phase 1 peat probing survey on a 100m grid across the proposed study area, recording:
  - Visual description of peat layers and their approximate depth, with peat described as Fibrous, Pseudo-fibrous or Amorphous (using Von Post classification system).
  - Identification of consolidated acrotelmic and unconsolidated catotelmic material.
  - A subjective indication of peat moisture content made by visual assessment and squeezing between the fingers.
  - A visual description of surface hydrological conditions (e.g. well drained, boggy, standing water).
  - Local slope angle.
  - Indication of soil or rock materials at the base of the peat probe (e.g. Glacial Till, weathered rock).
- A detailed Phase 2 peat probing survey based on the wind farm infrastructure layout, with probes undertaken at turbine locations, along access tracks and at areas of other infrastructure.

Assessment Method

10.4.2 Building on existing survey data for the wider area which was undertaken as part of the Operational Development, further assessment of potential impacts of the Proposed Development on ground conditions will be undertaken as part of the EIA Report, with reference to relevant legislation, policies and guidance.

10.4.3 The effects of construction, operation and decommissioning on the underlying ground conditions will be assessed as part of the EIA Report and informed by the following:

- Peat Stability Risk Assessment Report (PSRA) – using a Qualitative Risk Assessment methodology to assess baseline conditions of the peat slide risk at the Site to produce a peat slide hazard map. The report will define any requirements for further Quantitative Risk Assessment if deemed necessary and will present the findings of this assessment.

- Peat Management Plan (PMP) – this will outline how peat which will be excavated during the construction phase of the development will be managed and reused. The aims of the PMP are achieved through completion of the following objectives as noted in the guidance documents:
  - Description of the peat conditions on site and how this was determined.
  - Calculating expected volumes of peat to be excavated and reused.
  - Classification of excavated material.
  - Consideration of utilising appropriate peat type in borrow pit restoration.
  - Describe how excavated peat will be handled to ensure suitability for reuse.
  - Describe if temporary storage of peat will be required during construction and how this will be managed to ensure suitability for reuse.
  - Consideration of the potential volume of peat which may not be suitable for reuse and development of a Waste Management Plan.
- Borrow Pit Appraisal Report (BPAR) – the report will highlight potential borrow pit locations and volume of material to be extracted, and will include:
  - Area assessed for suitability for development of the borrow pit ('area of search') for which various environmental assessments will be undertaken.
  - Estimated dimensions of the borrow pit to be developed within the 'area of search'.
  - Estimated volumes of overburden to be removed.
  - Description of geology.
  - Anticipated method of working/extraction.
  - Individual figures for each borrow pit showing the area of search and proposed dimensions in plan view and an indicative cross-section of the proposed borrow pit with original and restored ground profile.
- Carbon Balance Assessment (Section 14) – to determine the carbon effect of the Proposed Development.

10.5 Baseline Conditions

10.5.1 The 1:50,000 BGS Superficial Geology Map from the BGS Onshore GeoIndex Viewer indicates that superficial cover is absent across the majority of the Site, suggesting that bedrock is at or close to the surface. Peat is indicated to be present in a number of localised areas across the Site, predominantly within depressions in the landscape or adjacent to waterbodies.

10.5.2 Peat probing surveys undertaken as part of the Operational Development EIA recorded the majority of peat to be less than 0.5m thick, with localised areas in excess of 3m thickness recorded in topographic lows. Where encountered, peat was generally recorded directly overlying bedrock.

10.5.3 The 1:50,000 BGS Bedrock Geology Map from the BGS Onshore GeoIndex Viewer indicates that the solid geology underlying the Site comprises Psammite with micaceous layers and calc-silicate pods of the Upper Garry Psammite Formation in the west of the Site, and

interbedded Psammite and Semipelite of the Achnaconeran Striped Formation in the east of the Site.

10.5.4 A small number of localised unnamed igneous intrusions are recorded across the Site, indicated to comprise of Amphibolite and Hornblende Schist. A number of faults are inferred across the western half of the Site, generally trending northeast to southwest. An axial plane trace of antiform and an axial plane trace of a synform are indicated in the centre of the Site, located generally parallel to each other, and trending north to south.

10.5.5 The BGS Onshore GeoIndex Hydrogeology Viewer indicates that the Site is underlain by rocks of the following aquifer groups:

- Loch Eil Group – recorded as a low productivity aquifer with small amounts of groundwater in near surface weathered zones and secondary fractures.
- Glenfinnan Group – recorded as a low productivity aquifer with small amounts of groundwater in near surface weathered zones and secondary fractures.

10.5.6 A review of the SEPA RBMP Interactive Map indicates that the Site is within a ground 'drinking water protection zone' but is not within a surface 'drinking water protection zone'. The Site is underlain by the Northern Highlands waterbody which is classified as 'good' in terms of groundwater quality.

10.5.7 The overall peat slide risk for the Operational Development was classified as low based on detailed surveys and assessment undertaken in 2012. The baseline assessment for the Proposed Development will be undertaken following further peat probing surveys.

10.6 Potential Effects

Construction Impacts and Effects

10.6.1 Construction in peat areas may cause overloading and compaction of peat, increasing the risk of instability or collapse of the internal peat structure with potential effects on the hydrological regime of relatively large areas.

10.6.2 Active or passive dewatering of peat deposits during construction may cause a degeneration in the peat structure by decreasing its water content, making it more susceptible to erosion.

10.6.3 Excavation or disturbance of peat may also lead to disposal and have implications in terms of the overall carbon balance of the development.

10.6.4 Erosion of the peat can be caused by stripping of vegetation, excavations, ground disturbance, installation of drainage ditches and construction of access tracks.

10.6.5 Excavation of superficial deposits is required for the construction of foundations for turbines, infrastructure compounds and access tracks. Activities which interact directly with the bedrock i.e. blasting for borrow pits have the potential to increase fracturing.

10.6.6 Mineral soils are expected to be thin, therefore the potential risk of erosion/instability is low.

Operational Impacts and Effects

10.6.7 No potential effects are expected on either superficial or solid geology as a consequence of the operational activities of the Proposed Development.

10.6.8 Subject to appropriate mitigation during construction, no additional effects on peat reserves are identified during operation of the Proposed Development.

10.7 Potential Mitigation

10.7.1 The Proposed Development will benefit from the presence of the significant network of existing access roads associated with the Operational Development and the Livishie hydroelectric power scheme. Alongside the existing access roads, opportunities to reopen Operational Development borrow pits and utilise existing laydown areas, will be incorporated into the site layout design where feasible. A feasibility assessment will be undertaken to determine if the Operational Development's substation can be utilised, or if extension of it is achievable, for the Proposed Development. Extension of the operational life of any of the Operational Development's infrastructure will be considered through the EIA process.

10.7.2 The peat depth probing surveys will be undertaken to inform the design and layout of the Proposed Development. An approach to avoid areas of deeper peat will be adopted as part of the design process, as well as areas that are classified as being at 'High' or 'Very High' risk of instability. The peat depth surveys and associated assessments will be carried out in accordance with the current best practice guidance.

10.7.3 The Peat Management Plan (PMP) will be informed by the results of the peat depth survey. This will be developed to include details of the likely volume of surplus peat generated, its reuse and mitigation measures proposed to avoid significant drying or oxidation of peat during construction. The draft PMP will be included within the EIA report.

10.7.4 A Carbon Balance Calculation will be undertaken in accordance with current guidance produced by the Scottish Government. The calculation considers the potential carbon savings from wind renewable energy, and losses associated with the construction of the wind farm, loss of peatland and losses/savings associated with carbon fixing potential of carbon stored in peatland.

10.7.5 The Borrow Pit Appraisal Report (BPAR) will highlight proposals for reinstatement of the proposed borrow pits, and particularly how surplus peat may be used to restore these areas.

10.8 Questions

10.8.1 **Do you consider the proposed methodologies and approach to mitigation appropriate?**

10.8.2 **Is there any additional data that needs to be considered as part of the baseline data?**

11 Noise and Vibration

11.1 Introduction

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

11.1.2 There are no inhabited dwellings within the Turbine Development Area boundary, or in close proximity to, the Proposed Development. The closest private dwelling is approximately 2km from the Site.

11.1.3 No significant effects were predicted for the Operational Development which (in line with current guidance) was assessed using the simplified assessment criterion for developments

where large distances exist between the turbines and receiver locations, and where predicted noise levels are low.

11.2 Legislation, Policy and Guidance

11.2.1 The assessment will be carried out in accordance with ETSU-R-97 *"The Assessment and Rating of Noise from Wind Farms"* (The Working Group on Noise from Wind Turbines, 1996) and the associated document "A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, May 2013" published by the Institute of Acoustics (Cand et al, 2013).

11.2.2 If a construction noise assessment is required, it would be carried out in accordance with *BS 5228-1:2009 "Code of practice for noise and vibration control on construction and open sites - Part 1: Noise"* (BSI British Standards, 2009).

11.3 Consultation to Date

11.3.1 A Pre-Application Meeting was held with The Highland Council (THC) on the 29th of May 2019. Advice was then provided in the form of a Pre-Application Advice Pack (Appendix 1.1). This advice is reflected in the proposed scope of assessment detailed in Section 11.4 below.

11.4 Proposed Scope of Assessment

Construction Noise

11.4.1 A construction noise assessment will be carried out in accordance with BS 5228-1:2009 *"Code of practice for noise and vibration control on construction and open sites - Part 1: Noise"*.

11.4.2 The construction noise assessment would be submitted to THC for approval should there be a requirement to undertake work out with daytime hours (Mon-Fri 7am to 7pm and Saturday 7am to 1pm) or where noise levels during daytime hours are likely to exceed 45dB(A) for short term works or 65dB for long term works (> 6 months) (both measures to be taken as a 1hr LAeq at the curtilage of any noise sensitive receptor). If an assessment is submitted, details of any mitigation measures would be provided including proposed hours of operation.

Operational Noise

11.4.3 An assessment will be carried out in accordance with ETSU-R-97 and the associated Good Practice Guide published by the Institute of Acoustics.

11.4.4 The target noise levels will either be a simplified limit of 35dB L_{A90} at standardised 10m wind speeds up to 10m/s or a composite limit of 35dB L_{A90} (daytime) and 38dB L_{A90} (night time) or up to 5dB above background noise levels at standardised 10m wind speeds up to 12m/s.

11.4.5 It is considered unlikely that vibration from the Proposed Development would have a significant effect on receptors. It is therefore proposed that vibration is Scoped Out of the EIA.

Cumulative Noise

11.4.6 The noise assessment will take into account the potential cumulative effect from any other existing or consented wind turbine developments. The limits detailed in Section 11.4.4 will apply to cumulative noise levels from more than one development.

11.4.7 The assessment will include a map showing all wind farm developments which may have a cumulative impact and all noise sensitive properties (including any for which a financial involvement relaxation is being claimed).

The Assessment Outputs

11.4.8 The assessment will include a table of figures which will include the following:

- The predicted noise immissions from the Proposed Development at each noise sensitive location (NSL);
- The predicted noise immissions based on consented limits from each existing or consented wind farm development at each NSL. If any correction is made for controlling property or another reason, this will be made clear;
- The predicted noise immissions from each existing or consented wind farm development at each NSL; and
- The cumulative levels based on consented and predicted levels at each NSL.

Background Noise Measurements

11.4.9 Consideration will be given to utilising the measurements undertaken in the report "*Pre-Operational Background Noise Survey Bhlaraidh Wind Farm Near Invermoriston, Scottish Highlands*" (Report ref. PJ3408/14318 Date December 2015).

11.4.10 If further background noise measurements are required, these will be undertaken in accordance with ETSU-R-97 and the Good Practice Guide. Monitoring locations would be agreed with the Council's Environmental Health Officer. Where a monitoring location is to be used as a proxy location for another property, care would be taken to ensure it is not affected by other noise sources such as boiler flues, rivers, etc. which are not present at that other property.

11.4.11 Should background noise surveys be required, the applicant would liaise with Environmental Health regarding methodology.

11.5 Potential Mitigation

Construction

11.5.1 Relevant mitigation measures for will be captured within the site-specific Construction Environmental Management Plan (CEMP).

Operational

11.5.2 The selection of the final turbine and operating modes to be installed at the Site will be made on the basis of enabling the relevant ETSU-R-97 noise limits to be achieved at surrounding properties.

11.5.3 The assessment will include an outline for a mitigation scheme to be implemented should noise levels from the Proposed Development subsequently be found to exceed consented levels.

11.6 Questions

11.6.1 **Do you agree that the scope of the proposed assessment is appropriate?**

11.6.2 **Do you agree that it is appropriate to scope out vibration from the EIA assessment?**

12 Transport and Traffic

12.1 Introduction

12.1.1 The Transport and Traffic chapter will assess the potential effects arising from the Proposed Development with respect to the transportation of personnel, materials, plant items and turbine components during the construction and operation of the development, as described in Section 2 'The Proposed Development'.

12.2 Legislation, Policy and Guidance

12.2.1 The methodology will principally follow the 'Guidelines for the Environmental Impact of Road Traffic' (2003) prepared by the Institute of Environmental Assessment.

12.2.2 The impact of the traffic estimated to be generated by the Proposed Development on the surrounding local road network will be subject to a screening process following two rules outlined in the Guidelines to identify the appropriate extent of the assessment area:

- Rule 1 - include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%).
- Rule 2 - Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

12.2.3 The assessment of the baseline situation will determine which sections of road should be subject to which of the above rules. Where the predicted increase in traffic flows is lower than the appropriate thresholds, the Guidelines suggest the significance of effects can be stated to be low or insignificant and further detailed assessments are not warranted.

12.3 Consultation to Date

12.3.1 A Pre-Application Meeting was held with The Highland Council (THC) on the 29th of May 2019. Advice was then provided in the form of a Pre-Application Advice Pack (Appendix 1.1).

12.4 Proposed Scope of Assessment

12.4.1 The geographical scope of the assessment will be those sections of the road network likely to experience increases in traffic arising from the Proposed Development above the appropriate threshold from the aforementioned two rules (Section 12.2.2).

12.5 Baseline Conditions

12.5.1 Turbine components for the Operational Development were delivered from both Kyle of Lochalsh port, via the A87 and A887, and Inverness port, via the A82 and A887. These two ports will be considered and assessed as candidate ports of entry alongside other suitable ports to establish suitable turbine component transportation routes.

12.5.2 Further assessment work is required before the aforementioned routes can be confirmed. This assessment work will be presented in Volume 3 – Appendices of the EIA Report as the Abnormal Load Route Survey Report.

12.5.3 The Proposed Development will benefit from the presence of the significant network of existing hydroelectric power and Operational Development access roads, which will be incorporated into the site layout design where feasible.

12.6 Potential Effects

12.6.1 Where the estimated increase in traffic flows is expected to be greater than the appropriate rules above, the following potential environmental effects as identified by the IEMA Guidelines will be considered in more detail:

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and intimidation; and
- Accidents.

12.6.2 The potential for cumulative effects from other relevant developments in the study area will also be considered.

12.7 Potential Mitigation

12.7.1 A Traffic Management Plan (TMP) would be prepared prior to the commencement of the Proposed Development.

12.8 Questions

12.8.1 **Are there any other guidance documents that should be considered?**

12.8.2 **Do you agree that the proposed assessment methodology is appropriate?**

13 Socio-economics, Recreation and Tourism

13.1 Introduction

13.1.1 This chapter will consider the potential socio-economic, recreation and tourism effects from the Proposed Development. This includes a consideration of existing land uses within the Site, local recreation and tourism activity, employment generation and any indirect economic effects from the development.

13.1.2 The Applicant is already a major employer throughout the North of Scotland and particularly within the Great Glen region, providing direct employment through the development and construction of generation or infrastructure projects such as the Operational Development, Stonelairg wind farm, Livishie and Glendoe hydroelectric power schemes, and associated grid connections. All of which have made a significant contribution to the local economy.

13.2 Legislation, Policy and Guidance

13.2.1 There is no specific legislation or guidance available on the methods that should be used to assess the socio-economic impacts of a proposed onshore wind farm development. The proposed method has however been based on established best practice, including that used

in the UK Government and industry reports on the sector. In particular this assessment will draw from two studies by BiGGAR Economics on the UK onshore wind energy sector, a report published by RenewableUK and the Department for Energy and Climate Change (DECC) in 2012 on the direct and wider economic benefits of the onshore wind sector to the UK economy (BiGGAR Economics, 2012) and a subsequent update to this report published by RenewableUK in 2015 (BiGGAR Economics, 2015). These reports will provide the input assumptions if the data for the development is not available.

13.2.2 There is also no formal legislation or guidance on the methods that should be used to assess the effects that wind farm development may have on tourism and recreation interests. The proposed method would consider individual attractions and tourism facilities to assess if there could be any effects from the Proposed Development.

13.2.3 It is also important that the socio-economic and tourism assessment takes account of the relevant local and national policy objectives. The most relevant objectives for this are expected to be included in the following strategies:

- Scotland's Economic Strategy (Scottish Government, 2015); and
- Tourism Scotland 2020 Strategy (Scottish Tourism Alliance, 2012).

13.3 Proposed Scope of Assessment

13.3.1 It is anticipated that the contents of the assessment chapter will include:

- introduction, including scope of assessment and methodology;
- economic development and tourism strategic context;
- baseline socio-economic context;
- baseline tourism and recreation context;
- socio-economic assessment;
- tourism and recreation impact assessment;
- proposed measures and actions to maximise local economic and community impacts;
- proposed measures and actions to mitigate any harmful effects (if required); and
- summary of findings and conclusion.

13.3.2 This will primarily be a desk-based study with consultation undertaken by the Applicant with the local community to further inform the socio-economic, recreation and tourism baseline and inform any opportunities from the Proposed Development which arise therein.

13.4 Baseline Conditions

13.4.1 The baseline assessment will include a description of the current socio-economic, recreation and tourism baseline with the local area. This will include a summary of economic performance data and a description of the relevant tourism assets that will be covered in the assessment.

13.4.2 The baseline environment will cover and compare three study areas:

- Local Area, comprising electoral wards that cover the location of the development and nearest settlements;
- The Highland Council; and
- Scotland.

13.4.3 The economic impacts will be quantified for The Highland Council area and Scotland.

13.4.4 The baseline study will cover:

- the demographic profile of the local area within the context of the regional and national demographic trends;
- employment and economic activity in the local area within the context of regional and national economies;
- the industrial structure of the local area within the context of regional and national economies;
- the role of the tourism sector in the local and regional economy;
- an analysis of tourism statistics in Scotland, THC and the Local Area; and
- identification of local tourism and recreation assets, including accommodation providers and public paths; and
- wage levels within the regional economy compared to the national level.

13.4.5 Tourist attractions and accommodation will be identified within 15 km of the site boundary. Tourist attractions include permanent fixtures (e.g. museums, castles and trails) as well as temporary events (e.g. music or arts festivals).

13.4.6 Important attractions attributed to THC will also be identified due to their increased sensitivity, even if they lie outside of the 15 km study area.

13.5 Potential Effects

13.5.1 The issues that will be considered in this assessment will include the potential socio-economic, recreation and tourism effects associated with the Proposed Development.

13.5.2 An economic impact analysis will be undertaken using the methodology developed by BiGGAR Economics, which has been used to assess over 100 onshore wind farms across the UK. The potential socio-economic effects that will be considered are:

- temporary effects on the regional and/or national economy due to expenditure during the construction phase;
- permanent effects on the regional and/or national economy due to expenditure associated with the ongoing operation and maintenance of the Proposed Development;
- permanent effects as a result of any additional public expenditure that could be supported by the additional tax revenue that would be generated by the Proposed Development during the operational phase;

- permanent effects on the local economy that could be supported by any community funding and/or shared ownership proposals during the operational phase of the Proposed Development; and
- temporary effects on the regional and/or national economy due to expenditure during the decommissioning phase.

13.5.3 The link between onshore wind energy developments and the tourism sector is a subject of debate. However, the most recent research has not found a link between tourism employment, visitor numbers and onshore wind development. For example, in 2017 BiGGAR Economics published an updated study (BiGGAR Economics, 2017) that considered 28 wind farms constructed between 2009 and 2015 and the trends in tourism employment in the areas local to these developments. The analysis found that there was no relationship between the development of onshore wind farms and tourism employment at the level of the Scottish economy, at the local authority level nor in the areas immediately surrounding wind farm developments.

13.5.4 Nevertheless, the tourism sector is an important contributor to the Scottish economy and so there is merit in considering whether the Proposed Development will have any effect on the tourism sector. This assessment will consider the potential effects that the Proposed Development could have on tourism attractions, routes, trails and local accommodation providers.

13.5.5 This will consider the implications of any effects identified for the tourism sector in the local area and wider region.

13.5.6 Effects will be considered based on the guidance from guidelines for Environmental Impact Assessments (IEMA, 2004) and a Handbook for EIA (Scottish Natural Heritage, 2018).

13.6 Potential Mitigation

13.6.1 During construction, measures will be adopted by the Applicant to ensure that local companies are invited to tender for elements of the project, for example by promoting the use of the Highlands and Islands Open4Business supplier portal (https://www.o4b-highlandsandislands.com/) within primary contracts. The socio-economic and tourism assessment will consider ways by which expenditure resulting from the Proposed Development and flowing from any community funding and/or shared ownership proposals can be optimised to generate the maximum benefits for the local economy and community.

13.6.2 Other proposed mitigation measures will depend on the findings of the assessment and potential effects identified.

13.7 Questions

13.7.1 **Are there any particular sources of information that should be considered?**

13.7.2 **Do you agree that the scope of the proposed assessment is appropriate?**

14 Climate Change

14.1.1 A requirement of the Section 36 application is for Applicants to complete the online Carbon Calculator tool. The tool assesses the carbon impact of the Proposed Development by

comparing the carbon costs of the wind farm with the carbon savings attributed to the scheme. This generates a carbon payback time for the wind farm to become carbon neutral.

14.1.2 An initial carbon balance of the Site will be calculated taking account of issues involving any potential peat removal (if applicable), embedded carbon in wind farm components, and transport, coupled with estimated carbon savings delivered by the renewable electricity generated over the lifetime of the development.

14.1.3 The online carbon calculator assessment will then be completed utilising all information from the carbon balance calculations and the results of the onsite peat probing exercise.

14.1.4 **Do you agree that the scope of the proposed assessment is appropriate?**

15 Other Issues

15.1 Aviation

Baseline Conditions

15.1.1 The Proposed Development consists of an extension to the Operational Development, located approximately 5km north of Invermoriston. The Proposed Development is expected to comprise of approximately 20 turbines, with tip heights of up to 180m and a rotor diameter of up to 158m. The Site falls at the edge of the safeguarded area for Inverness Airport which is approximately 61km from the Proposed Development. The local airspace is Class G (uncontrolled airspace) up to Flight Level (FL) 195 i.e. 19,500 feet and Class C (Controlled Airspace) above FL 195.

15.1.2 The Proposed Development is also within the Ministry of Defence's (MoD) Low Flying Area 14 which is designated as a low priority military flying area. There is a MoD Airfield Radar (Figure 15.1) 93km (50.2 nautical miles) from the Proposed Development, although radars services are generally only provided within 40nm of the radar installation.

15.1.3 There are three NATS En-Route Ltd (NERL) Primary Surveillance Radar (PSR) facilities within the wider area (Figure 15.1): Perwinnes (151km from the Proposed Development), Alanshill (154.4km from the Proposed Development) and Tiree (160.5km from the Proposed Development).

15.1.4 There are no MoD Air Defence Units, Met Office radars or Helicopter Landing Sites (HLS) within the wider area.

15.1.5 There is a gliding and soaring site along a ridgeline lying approximately 9km to the south of the Proposed Development at its closest point. The ridge line is approximately 13km in length.

Proposed Scope of Assessment

15.1.6 If the Proposed Development includes turbines of 150m to tip height or above, an aviation lighting layout would need to be agreed. Potential impacts would be assessed through consultation with NATS, MoD, Highlands and Islands Airports Ltd, other airport operators as appropriate and other stakeholders, primarily through the mechanism of consultation procedure managed by Defence Infrastructure Organisation Wind Farm Safeguarding on behalf of all other MoD Stakeholders. The consultation would be managed in two stages: the

first to gather general views regarding the suitability of the Site; and a further detailed consultation to determine the potential impacts on aviation issues of the final site layout.

15.1.7 The potential impacts on military and commercial aviation would be understood through a detailed consultation as part of the Scoping process and continued throughout the EIA process, if required.

Potential Effects

15.1.8 Turbines have the potential to act as obstructions to low flying aircraft and can be detected by aviation radars, resulting in radar clutter for air traffic controllers and airport operators.

Questions

15.1.9 **Do you agree that the scope of the proposed assessment is appropriate?**

15.2 Telecommunications, Television and Radio Links

15.2.1 Wind farms can cause television, radio and microwave interference by blocking and / or causing part of the signal to be delayed.

15.2.2 A previous assessment was undertaken in relation to the Operational Development to determine its potential effects on telecommunications, TV and radio interference. The assessment identified television and telecommunications fixed link signal transmissions in proximity to the Site.

15.2.3 The assessment concluded that no effects are predicted to telecommunication, television or radio signals.

15.2.4 Given the previous assessment findings and considering the proximity of the Proposed Development to the Operational Development, it is proposed that an assessment of television, radio and microwave interference is scoped out of the EIA.

15.2.5 **Do you agree that it is appropriate to scope out telecommunications, television and radio links from the EIA assessment?**

15.3 Shadow Flicker

15.3.1 Shadow flicker can occur when the blades of a wind turbine covers the sun for brief moments as they rotate. For an observer viewing this phenomenon through a narrow opening (such as a window from within the affected area) it can create a rapid change in luminance, appearing as if the light is being 'flicked' on and off each time a blade passes in front of the sun.

15.3.2 The affected area is constrained in size and shape by astronomic and geometric parameters, such as the trajectory of the sun and the position and dimensions of the wind turbine. For a fixed observer, the occurrence of shadow flicker from a given wind turbine is generally limited to certain parts of the year and certain times of the affected days. It is possible to predict when, where and for how long shadow flicker could theoretically occur using commercially available computer programs.

15.3.3 The advice sheet from Scottish Government, Onshore Wind Turbines, a web-based guide (Scottish Government, 2014) sets out the potential geographic area which may fall under assessment: *"Where this (shadow flicker) could be a problem, Applicants should provide calculations to quantify effect. In most cases however, where separation is provided between*

wind turbines and nearby dwellings (as a general rule ten rotor diameters), 'shadow flicker' should not be a problem."

15.3.4 Published research by the Department of Energy and Climate Change (DECC), Update of UK Shadow Flicker Evidence Base (DECC, un-dated), evaluates the current international understanding of shadow flicker and confirms an acceptable study area for assessment is ten rotor diameters from each turbine and within 130 degrees either side of north.

15.3.5 The maximum rotor diameter of the proposed turbines would not exceed 158m, so the area where shadow flicker could be a problem extends to a maximum of 1.58km.

15.3.6 With there being no residential properties within 1.58km, it is proposed that shadow flicker is scoped out of the EIA.

15.3.7 **Do you agree that it is appropriate to scope out shadow flicker from the EIA assessment?**

15.4 Ice Throw

15.4.1 Icing in Scotland is likely to be a rare occurrence, with the Icing Map of Europe (WECO, 2000) showing Scotland to be within a light icing area with an annual average of only 2-7 icing days per year.

15.4.2 The risk associated with ice throw affecting members of the public is considered to be very low given the remote location of the Proposed Development.

15.4.3 This is reduced further as turbines are fitted with vibration sensors which shut the turbines down should any imbalance that might be caused by icing be detected.

15.4.4 In addition, mitigation measures in place for the Operational Development would benefit the Proposed Development. These include:

- Service crews are trained regarding the potential for ice throw;
- Ice risk conditions are monitored by the operational wind farm staff; and
- Public notices are in place at access points alerting members of the public and staff accessing the Site of the possible risk of ice throw under certain weather conditions.

15.4.5 It is therefore proposed that ice throw is scoped out of the EIA.

15.4.6 **Do you agree that it is appropriate to scope out ice throw from the EIA assessment?**

15.5 Human Health

15.5.1 The assessment of potential human health effects will be undertaken in the context of noise and shadow flicker where scoped in to the EIA. It is therefore proposed that an assessment on potential effects on human health is scoped out of the EIA.

15.5.2 **Do you agree that it is appropriate to scope out human health from the EIA assessment?**

15.6 Risk of Major Accidents and/or Disaster

15.6.1 Given the nature of the Proposed Development, and its remote location, the risk of a major accident or disaster is considered to be extremely low. The Principal Designer would need to ensure a Design Risk Assessment process is followed during the design phase to ensure designers fully assess risks and mitigate to a level deemed as low as reasonably practicable

(ALARP) during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015).

15.6.2 During the operational phase of the Proposed Development, routine maintenance inspections would be completed in order to ensure the safe and compliant operation of all built infrastructure.

15.6.3 A Peat Stability Risk Assessment Report (PSRA) will be undertaken as part of the EIA Report, detailed in Section 10.

15.6.4 It is therefore proposed that an assessment of the risk of major accidents and/or disasters is scoped out of the EIA.

15.6.5 **Do you agree that it is appropriate to scope out risk of major accidents and/or disaster from the EIA assessment?**

15.7 Air Quality

15.7.1 The air quality at this Site is expected to be good due to the rural location, with few pollution sources. The main pollution source is likely to be local emissions from traffic on the A887 and the A82.

15.7.2 During the construction of the wind farm the movement of vehicles and on-site plant would generate exhaust emissions. Given the short-term nature of the construction period, and the limited area to be developed within the context of the large-scale nature of the Site, effects on air quality are likely to be negligible.

15.7.3 Construction activities (such as borrow pit works) have the potential to generate dust during dry spells, which may adversely affect local air quality. Given the scale and nature of construction activities and given the distance between construction areas and the nearest residential properties, it is considered that dust from construction is unlikely to cause a nuisance.

15.7.4 An operational wind farm produces no notable atmospheric emissions. The operation of the wind farm would therefore have no discernible adverse effects on local or national air quality.

15.7.5 Relevant mitigation measures for air quality and pollution control will be captured within the site-specific Construction Environmental Management Plan (CEMP).

15.7.6 It is therefore proposed that an assessment of air quality is scoped out of the EIA.

15.7.7 **Do you agree that it is appropriate to scope out air quality from the EIA assessment?**

15.7.8 **Do you agree that it is appropriate to scope out a dust survey from the EIA assessment?**

15.8 Forestry

15.8.1 There are no areas of commercial forestry within the Proposed Development boundary.

15.8.2 There is no tree coverage on the Site, consequently it is not envisaged that significant tree felling will be required.

15.8.3 The turbine transportation route may require the trimming, or felling, of trees to ensure the safe transportation of turbine components on the public highway. The requirement for this, and the consultation required to ensure relevant approvals, will be considered and detailed in the Volume 3 – Appendices - Abnormal Load Route Survey Report.

15.8.4 It is therefore proposed that an assessment of forestry is scoped out of the EIA.

15.8.5 **Do you agree that it is appropriate to scope out forestry from the EIA assessment?**

15.8.6 **Do you agree that it is appropriate to scope out an assessment of the impact of tree felling and compensatory planting plan?**

15.9 Waste Strategy

15.9.1 There is no tree coverage on the Site, consequently there will not be significant waste from tree felling.

15.9.2 A CEMP will be provided which will document our approach to waste management. The CEMP will be produced in line with THC guidance note *"Construction Environmental Management Process for Large Scale Projects"* (The Highland Council 2010). A borrow pit management and peat management plan will be provided as appendices to the CEMP. It is therefore proposed that waste strategy is scoped out of the EIA.

15.9.3 **Do you agree that it is appropriate to scope out forestry waste from the EIA assessment?**

15.9.4 **Do you agree that it is appropriate to scope out waste strategy from the EIA assessment?**

15.10 Public Access

15.10.1 The potential effects on visual amenity will be fully assessed in the Landscape and Visual Impact chapter of the EIA Report.

15.10.2 The application will be accompanied by an Outdoor Access Management Plan. The Highland Council's Pre-Application Pack states that *"the format of previous SSE access management plans could be followed here. Considering the few existing paths and tracks that will be physically affected it need not be onerous."*

15.10.3 The Outdoor Access Management Plan will consider known public access routes in the immediate vicinity of the Proposed Development and outline how public access will be safely managed, and (where practical) maintained, during the construction and operation phase of the development noting the legal obligations placed on duty holders under The Construction (Design and Management) Regulations 2015.

15.10.4 With no significant effects expected, it is proposed that further assessment of public access is scoped out of the EIA Report.

15.10.5 **Do you agree that it is appropriate to scope out further assessment of public access from the EIA assessment?**

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