KINTRADWELL WIND FARM

EIA Scoping Report

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EXECUTIVE SUMMARY

Renewable Energy Systems Ltd (RES) ('the Applicant) are preparing an application for the Kintradwell Wind Farm ('Proposed Development'), located on the Kintradwell Estate, near Brora, 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 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 149.9m and a rotor diameter of up to 136m. Preliminary analysis has enabled an indicative site layout to be produced comprising of an expected 22 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 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 RES ('the Applicant) are preparing an application for the Kintradwell Wind Farm ('Proposed Development'), located on the Kintradwell Estate, near Brora, 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.

1.1.2 The Proposed Development (Figure 1.1) is located on rough moorland approximately 9km to the north of Brora.

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 149.9m and a rotor diameter of up to 136m. Preliminary analysis has enabled an indicative site layout to be produced comprising of an expected 22 turbines (Figure 1.2). This will be subject to further technical and environmental review throughout the Environmental Impact Assessment (EIA) process.

1.1.4 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, compound for potential battery storage, concrete batching plant, potential excavations/borrow workings, and one or more permanent meteorological masts.

1.1.5 This document forms the Scoping Report submitted to ECU in order to request a Scoping Opinion from the Scottish Ministers, on the 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 The Highland Council (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 RES is the world's largest independent renewable energy company active in onshore and offshore wind, solar, energy storage and transmission and distribution. At the forefront of the industry for over 35 years, RES has delivered more than 17GW of renewable energy projects across the globe and supports an operational asset portfolio exceeding 5GW worldwide for a large client base. Understanding the unique needs of corporate clients, RES has secured 1GW of power purchase agreements (PPAs) enabling access to energy at the lowest cost. RES employs more than 2,000 people and is active in 10 countries.

1.3.2 From its Glasgow office RES has been developing, constructing and operating wind farms in Scotland since 1993. RES has developed and/or built sixteen wind farms in Scotland with a total generation capacity of 417MW. RES is currently preparing to construct Solwaybank Wind Farm in Dumfries and Galloway and has recently finished constructing Freasdail Wind Farm in Argyll and Bute and Glenchamber Wind Farm in Dumfries and Galloway.

1.4 ITPEnergised

1.4.1 ITPEnergised (ITPE) have been commissioned by the Applicant to coordinate the EIA process for the Proposed Development.

2 Environmental Impact Assessment

2.1 Environmental Impact Assessment

2.1.1 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).

2.1.2 The EIA Regulations require that before consent is granted for certain types of development, an EIA must be undertaken. The EIA Regulations 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).

2.1.3 The Proposed Development falls within Schedule 2(1) 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.

2.1.4 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’ will be offered following discussion with the consultation bodies.

2.2.2 The Applicant recognises the value of the scoping process 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 chapter 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. 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 Regulations and other relevant good practice guidance. The EIA Report will comprise the following volumes:

- Volume 1 – Non-Technical Summary;
- Volume 2 – Written Statement;
- Volume 3 – Landscape and Visual Impact Assessment GIS Output;
- Volume 4 - Landscape and Visual Impact Assessment SNH Output;
- Volume 5 - Landscape and Visual Impact Assessment THC Output;
- Volume 6 – Technical Appendices; and
- Volume 7 – Confidential Annex.

2.3.2 Volume 2 will comprise of the following chapters:

- Chapter 1 – Introduction;
- Chapter 2 – Proposed Development;
- Chapter 3 – Design Evolution and Alternatives
- Chapter 4 – Approach to EIA;
- Chapter 5 – Landscape and Visual;
- Chapter 6 – Cultural Heritage and Archaeology;
- Chapter 7 – Ecology;
- Chapter 8 – Ornithology;
- Chapter 9 – Geology, Hydrology and Hydrogeology;
- Chapter 10 - Traffic and Transport;
- Chapter 11 – Noise;
- Chapter 12 - Aviation;
- Chapter 13 – Potential Grid Connection;

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

2.3.3 Each chapter[1] 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; and
- Summary.

2.4 EIA Report Format

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

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, near Brora in the Sutherland area of the Highlands.

3.1.3 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;

[1] Excludes front-end (1-4) and closing (13-17) chapters.

- underground cabling between the turbines;
- on-site substation;
- wind farm control building with welfare facility;
- temporary construction compound(s), laydown area(s);
- compound for potential battery storage;
- borrow pits (if suitable locations available);
- concrete batching plant; and
- permanent communications mast.

3.2 Site Description

3.2.1 The Proposed Development (Figure 1.1) is located on rough moorland approximately 9.2km to the north of Brora. The site red line boundary comprises an area of approximately 3084 hectares (ha) and rises steeply from sea-level in the south to 545m Above Ordnance Datum (AOD) at Carn Garbh in the north.

3.2.2 The southernmost section of the site abuts the A9 road corridor, the Highland Railway, power lines and scattered dwellings and farm buildings. Gordonbush wind farm (and the consented Gordonbush Extension) are located to the north-west c.1.5km, from the Proposed Development.

3.3 Site Design

3.3.1 The Proposed Development will be optimised through the EIA process considering environmental, technical and socio-economic constraints and opportunities.

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 149.9m and a rotor diameter of up to 136m. Preliminary analysis has enabled an indicative site layout to be produced comprising of an expected 22 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 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 Cumulative sites within 20km of the site are illustrated on Figure 5.3 and listed in Table 3.1.

Table 3.1: Cumulative sites within 20km

Site Name	Status	Number of turbines	Height to Blade Tip	Distance and Direction from the Site
Gordonbush	Operational	35	110m	1.5km
Gordonbush Extension (as consented)	Consented	15	12no. x 130m and 3no. x 115m	2km
Gordonbush Extension (variation scheme)	In planning	11	149.9m	2km
Kilbraur	Operational	19	115m	8.5km
Kilbraur Extension	Operational	8	125m	9km

3.4.3 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 will 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 onto an appropriate voltage for onward transmission onto the National Grid.

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 12-18 months.

3.6.2 Compound(s) would be required during construction. The site compound(s) 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. A concrete batching plant would also be in operation.

3.6.3 Stone and sand required to construct any new access tracks could potentially be obtained from onsite borrow pits. The exact location of borrow pits would be dependent 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).

3.7 Operational Phase

3.7.1 The assessments undertaken to inform the EIA will consider the operational phase of the Proposed Development in perpetuity.

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

3.8 Decommissioning Phase

3.8.1 When decommissioning is required, it is considered that the impacts would be less than the impacts experienced during the construction phase. Should consent be granted, it is anticipated that there would be a condition which would require the removal of elements of the Proposed Development should they become non-operational for a defined period of time.

4 Planning Policy Context

4.1 Introduction

4.1.1 The application will be submitted under Section 36 of the Electricity Act 1989 (Section 36 application) and accompanied by a Planning Statement in support of the Proposed Development. The Planning Statement will consider the Proposed Development against identified planning and other policy objectives, concluding with substantiated comments about the extent to which the Proposed Development complies with the aims and objectives of identified plans and policies.

4.1.2 For clarity, the Planning Statement will draw upon the residual effects, post mitigation, of the Proposed Development identified in the various technical chapters of the EIA Report, in discussing the extent to which it complies with the aims and objectives of identified planning, energy and other relevant policy objectives. The planning and energy related documents that will be considered by the Applicant are set out below.

4.2 National Planning Policy

National Planning Framework 3

4.2.1 The Third National Planning Framework (NPF3) for Scotland sets the overall context for development planning across the country and provides a framework for the spatial development of Scotland as a whole. NPF3 was introduced in June 2014 and represents an up to date expression of Scottish Government policy on land use matters. NPF3 sets out the Scottish Government's development priorities over the next 20 to 30 years and identifies national developments which support the development strategy. NPF3 is a material consideration in the determination of Section 36 applications.

4.2.2 The Planning Statement will identify those elements of NPF3 considered relevant to determination of the Proposed Development. While Section 3 of NPF3 'A low carbon place' is likely to contain material of most relevance to the Proposed Development, other sections of NPF3, notably Section 2 'A successful, sustainable place' and Section 4 'A natural, resilient place' will also contain relevant commentary and the Planning Statement will identify and discuss these matters.

Scottish Planning Policy

4.2.3 The most up to date version of Scottish Planning Policy (SPP) was introduced by the Scottish Government in June 2014 alongside NPF3. SPP states that its purpose "*is to set out national planning polices which reflect Scottish Ministers' priorities for operation of the planning system and for the development and use of land*" (Scottish Government, 2014). As a

statement of Scottish Ministers' priorities, the content of SPP is a material consideration that carries significant weight in the assessment of Section 36 applications, although SPP makes it clear that it is for the decision maker to determine the appropriate weight in each case.

4.2.4 The subject policies contained in SPP mirrors the structure of the NPF3 and are set out under the following headings:

- A Successful, Sustainable Place;
- A Low Carbon Place;
- A Natural, Resilient Place; and
- A Connected Place.

4.2.5 The narrative and policies under the 'Low Carbon Place' heading are likely to be of most relevance to the Proposed Development, as this section contains commentary relating to renewable energy matters in general and in relation to onshore wind in particular. Table 1 of SPP 'Spatial Frameworks' shows areas where wind farms will not be acceptable (Group 1), areas of significant protection (Group 2) and areas with potential for wind farm development (Group 3). As far as it is possible to tell from the scale of the Onshore Wind Energy Supplementary Guidance (2016) on The Highland Council's website, the site is located partly within a Group 2 and partly within a Group 3 area.

4.2.6 The Planning Statement will consider the Proposed Development in the context of the Spatial Framework and other relevant commentary in SPP, including aims and objectives regarding the creation of a low carbon economy, the presumption in favour of development that creates sustainable development and other relevant matters relating to rural development.

Onshore Wind Turbines, Online Renewables Planning Advice (May 2014)

4.2.7 The Scottish Government introduced online renewables advice in February 2011, which has been updated since then. The most recent specific advice note regarding onshore wind turbines was published in May 2014. The advice note identifies the typical planning considerations in determining applications for onshore wind turbines, including landscape impact, impacts on wildlife and ecology, shadow flicker, noise, ice throw, aviation, road traffic impacts, cumulative impacts and decommissioning.

4.2.8 The Planning Statement will consider the most up to date version of the advice note in place at the time of preparation.

Planning Advice Notes

4.2.9 Alongside NPF3 and SPP, the Scottish Government provides technical advice on specific land use planning matters through a series of Planning Advice Notes (PANs). A number of PANs are potentially relevant to the Proposed Development and these may be briefly discussed in the Planning Statement, with more detailed commentary reserved for the relevant technical chapters of the EIA Report. At this stage, it is envisaged that the following PANs may be of relevance:

- PAN 1/2011: Planning and Noise (2011);
- PAN 1/2013: Environmental Impact Assessment, Revision 1.0 (2017);
- PAN 2/2011: Planning and Archaeology (2011);

- PAN 3/2010: Planning Advice on Community Engagement (2010);
- PAN 51: Planning, Environmental Protection and Regulation (2006);
- PAN 60: Planning for Natural Heritage (2000);
- PAN 61: Planning and Sustainable Urban Drainage Systems (2001);
- PAN 68: Design Statements (2003);
- PAN 69: Planning and Building Standards Advice on Flooding (2004);
- PAN 75: Planning for Transport (2005); and
- PAN 79: Water and Drainage (2006).

Historic Environment Policy for Scotland (2019)

4.2.10 The Historic Environment Policy for Scotland (HEPS) sets out policies for the historic environment, provides greater policy direction for Historic Environment Scotland and provides a policy framework to inform the work of organisations that have a role and interest in managing the historic environment. HEPS is a material consideration which should be taken account of whenever a planning decision will affect the historic environment. Pages 10 and 11 illustrate the challenges and opportunities facing the historic environment including climate change and the effort required to mitigate and adapt to its effects.

4.2.11 The Planning Statement will consider the Proposed Development against HEPS, notably the 'Policies and Principles' which include conservation and management of change for the benefit of present and future generations. HEPS recognises that changes in society, climate change and economy can create challenges for the historic environment requiring that resources are managed sustainably to balance competing demands.

4.3 Strategic and Local Planning Policy

Highland-wide Local Development Plan, Caithness and Sutherland Local Development Plan and Onshore Wind Supplementary Guidance

4.3.1 The Development Plan covering the site is the Highland–wide Local Development Plan (adopted 2012) (HwLDP) and the Caithness and Sutherland Local Development Plan (adopted 2018) (CaSPlan). Onshore Wind Supplementary Guidance adopted in 2016 also forms part of the Development Plan documents.

4.3.2 A review of the HwLDP commenced in 2015 and consultation was held on the Main Issues Report to inform the first stage of the replacement HwLDP process. The review was postponed during 2017 when The Highland Council confirmed their intention to wait until the implications of the Scottish Government's review of the planning system has become clearer. The Planning (Scotland) Act 2019 has very recently received royal assent (July 25th 2019), however there is no update at the time of writing as to when the review may resume. Therefore, it is expected that the currently adopted HwLDP will provide the established planning policy throughout the EIA Report preparation stage and the determination period for the Proposed Development. Progress of the HwLDP review will be monitored and if appropriate the Planning Statement will contain a section that discusses relevant progress.

4.3.3 The HwLDP will be a significant material consideration in shaping The Highland Council's consultation response to the Section 36 application and the Planning Statement will identify

those aims, objectives and planning policies of the HwLDP considered relevant to the Proposed Development. Policy 67 of the HwLDP is the principal policy relating to renewable energy development, however other policies of the HwLDP will also be discussed as appropriate within the context of the EIA. The CaSPlan contains commentary on the relevance of renewable energy development for the Highlands and will also be considered.

4.3.4 The Highland Council adopted their Onshore Wind Supplementary Guidance in 2016, which also forms part of the Proposed Development Plan and is afforded the same weight as the Local Development Plan documents for decision making purposes. The Planning Statement will identify the relevant sections of the Supplementary Guidance.

4.4 Energy Policy

4.4.1 According to the United Nations Intergovernmental Panel on Climate Change's fifth assessment report, fossil fuel power generation should be phased out 'almost entirely' by the end of the century to limit global warming to 2 degrees Celsius (°C) above pre-industrial levels. The report states that low carbon electricity supply will have to increase from 30% currently to more than 80% by 2050.

4.4.2 Most of the energy policy documents of relevance to the Proposed Development are concerned with reducing the amount of greenhouse gases (GHG) that are emitted as a result of energy production and a related objective of increasing the proportion of energy derived from renewable sources. The Planning Statement will identify and discuss the key aims and objectives of the most pertinent energy policy documents to the Proposed Development, as at the time of EIA Report preparation. The discussion will include relevant European, United Kingdom (UK) and Scottish energy related legislation and policy. It is anticipated that the commentary on energy policy will identify and discuss the following publications:

- 2009 Copenhagen Accord - As a party to the Copenhagen Accord, the UK has agreed a range of proclamations and objectives, including that climate change is 'one of the greatest challenges of our time', which must be combated 'urgently'.
- 2009 European Renewable Energy Directive - The Directive encourages energy efficiency, energy consumption from renewable sources and the improvement of energy supply.
- The Climate Change (Scotland) Act 2009 - Sets out the statutory framework for GHG emission reductions in Scotland. The Scottish Government published its updated Climate Change Plan in February 2018, setting out proposals to drive emissions down by 66% by 2032.
- Renewables Action Plan (2009) including associated updates – The overall aim is to support and accelerate the implementation of renewable energy in line with EU targets.
- Onshore Wind Policy Statement (December 2017) - This statement by the Scottish Government examines a number of issues relating to the maintenance and continued support of onshore wind as a more mature technology for renewable energy generation. The statement covers a range of topics including route to market, strategic approach to development, protection for residents and the environment and community benefits.

- Scottish Energy Strategy: The future of energy in Scotland (December 2017) - This strategy document aims to guide Scottish Government decisions and priorities in the context of a 'whole system' approach to energy production and consumption. Two new 2030 targets are set by the strategy. Firstly, that the equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources. Secondly, an increase in 30% in the productivity of energy use across the Scottish economy.
- Electricity Generation Policy Statement, 2013 - This Scottish Government publication examines the way in which Scotland generates electricity and is underpinned by 4 key principles, one of which includes a largely decarbonised electricity generation sector by 2030.

4.5 Questions

4.5.1 **Do you agree that the Proposed Development falls partly within a Group 2 and partly within a Group 3 area?**

4.5.2 **Are the planning policies identified appropriate for inclusion in the Planning Statement?**

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

5 Landscape and Visual

5.1 Introduction

5.1.1 It is acknowledged from the outset that, in common with almost all commercial wind energy developments, some landscape and visual effects would occur as a result of the proposals.

5.1.2 A key principle of the European Landscape Convention is that all landscapes matter and should be managed appropriately. It is also acknowledged that landscapes provide the surroundings for people's daily lives and often contribute positively to the quality of life and economic performance of an area.

5.1.3 It is therefore proposed that a Landscape and Visual Impact Assessment (LVIA) is undertaken as part of the EIA and an LVIA Chapter be included in the EIA Report. The LVIA will be undertaken by Chartered Landscape Architects, who are experienced in the assessment of large scale, onshore wind energy projects and are fully familiar with the landscape in the vicinity of the site.

5.2 Legislation, Policy and Guidance

5.2.1 The LVIA shall be undertaken in accordance with the principles of best practice, as outlined in published guidance documents, notably the third edition of the Guidelines for Landscape and Visual Assessment (GLVIA3), (Landscape Institute and the Institute for Environmental Management and Assessment, 2013).

5.2.2 The methodology and assessment criteria proposed for the assessment has been developed in accordance with the principles established in this best practice document. It should be acknowledged that GLVIA3 establishes guidelines, not a specific methodology. The preface to GLVIA3 states:

"This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand."

5.2.3 The approach has therefore been developed specifically for this assessment to ensure that the methodology is fit for purpose.

5.2.4 As part of the development of the proposed methodology, consideration has also been given to the following documents:

- Guidelines for Landscape Character Assessment, Countryside Agency and SNH (2002);
- Landscape Character Assessment Guidance for England and Scotland: Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity, The Countryside Agency and SNH (2002);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, March 2012);
- Siting and Design of Wind farms in the Landscape, Version 3 (SNH, February 2017);
- Visual Representation of Wind farms – Version 2.2 (SNH, February 2017);
- Visualisation Standards for Wind Energy Developments (The Highland Council, July 2016);
- LI Advice Note 02/17 Visual representation of development proposals (Landscape Institute, March 2017);
- LI Advice Note 02/19 Residential Visual Amenity Assessment (RVAA), (Landscape Institute, March 2019);
- LI Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment (Landscape Institute, 2011).
- Assessing the Impacts on Wild Land Interim Guidance Note (SNH, 2007);
- Assessing Impacts on Wild Land Areas – Technical Guidance (Consultative Draft) (SNH, 2017); and
- Assessment of Highland Special Landscape Areas (THC, 2011)

5.2.5 Full details of the methodology will be provided within the LVIA chapter of the EIA Report.

5.3 Proposed Scope of Assessment

5.3.1 It is proposed that the main objectives of the LVIA will be as follows:

- to identify, evaluate and describe the current landscape character of the site and its surroundings, and also any notable individual or groups of landscape features within the site;
- to determine the sensitivity of the landscape to the type of development proposed;
- to identify potential visual receptors (i.e. people that would be able to see the Proposed Development) and evaluate their sensitivity to the type of changes proposed;
- to identify and describe any impacts of the Proposed Development in so far as they affect the landscape and/or views of it and evaluate the magnitude of change due to these impacts;
- to identify and describe any mitigation measures (including mitigation which is inherent in the design and layout of the Development) that have been adopted to avoid, reduce and compensate for landscape and visual effects;
- to identify and assess any cumulative landscape and visual effects;
- to evaluate the level of residual landscape and visual effects; and
- to make a professional judgement about which effects, if any, are significant.

Distinction between Landscape and Visual Effects

5.3.2 In accordance with the published guidance, landscape and visual effects shall be assessed separately, although the procedure for assessing each of these is closely linked. A clear distinction has been drawn between landscape and visual effects as described below:

- landscape effects relate to the effects of the Proposed Development on the physical and perceptual characteristics of the landscape and its resulting character and quality; and
- visual effects relate to the effects on specific views experienced by visual receptors and on visual amenity more generally.

Types of Landscape and Visual Impacts Considered

5.3.3 The LVIA will address all phases of the Proposed Development and effects will be considered during the construction phase, when the Proposed Development is being built (temporary effects), following completion of the Proposed Development (permanent effects) and during decommissioning at the end of the project (temporary effects).

5.3.4 The LVIA will not only assess the impacts associated with the turbines, but also any related impacts resulting from any anemometer masts, control building/substation, underground cabling, site tracks and access roads.

5.3.5 Consideration shall be given to seasonal variations in the visibility of the Proposed Development and these will be described where necessary.

5.3.6 The LVIA will also consider the potential for any cumulative effects to arise. The requirement for consideration of cumulative effects under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 is set out in Schedule 4, as follows:

"5. A description of the likely significant effects of the development on the environment resulting from, inter alia: (e) the cumulation of effects with other existing and/or approved development, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources"

5.3.7 This represents a change to the wording of the previous Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2010 which stated*: 'A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary,* ***cumulative****, short, medium and long-term, permanent and temporary, positive and negative effects of the development'*

5.3.8 There is therefore no longer any requirement under the current EIA Regulations to consider the potential for cumulative impacts in relation to other developments which are yet to be awarded consent.

5.3.9 Notwithstanding this, it is acknowledged that current best practice guidance for cumulative impact assessment (Assessing the Cumulative Impact of Onshore Wind Energy Developments, (SNH, 2012)) still refers to a consideration of proposals which are *'awaiting determination within the planning process with design information in the public domain'* and states that *'The decision as to which proposals in the planning / consenting system should be included in an assessment is the responsibility of the determining authority.'*

5.3.10 As such, it is proposed in this LVIA to consider cumulative effects caused by the development of the site in conjunction with other sites which are either operational, under construction, consented or the subject of a full planning application. The SNH best practice guidelines identify two principle types of cumulative visual impact:

- combined visibility – where the observer is able to see two or more developments from one viewpoint; and
- sequential visibility – where two or more sites are not visible at one location but would be seen as the observer moves along a linear route, for example, a road or public right of way.

5.3.11 The guidelines state that 'combined visibility' may either be 'in combination' (where two or more sites are visible from a fixed viewpoint in the same arc of view) or 'in succession' (where two or more sites are visible from a fixed viewpoint, but the observer is required to turn to see the different sites). Each of the above types of cumulative effect will be considered in the LVIA.

Study Areas

5.3.12 In order to assist with defining the study area, a digital Zone of Theoretical Visibility (ZTV) model was created as a starting point to illustrate the geographical area within which views of development on the site are theoretically possible. This was based on a 'bare-earth' scenario, whereby the screening effect of areas of existing vegetation or built features in the

landscape are not taken into account. The ZTV was modelled to blade tip height using the currently proposed maximum turbine blade tip height of 149.9m and is presented at Figure 5.1.

5.3.13 The ZTV is a useful tool used to provide a focus on the area and receptors that are most likely to be affected by a Proposed Development but should always be subject to verification in the field. In this regard, initial site work has been conducted during July 2019 to understand the actual likely visibility of development at the site.

5.3.14 Having reviewed the ZTV and with regard to best practice guidance, it is proposed that the LVIA will consider an initial 35km radius study area. Detailed assessment will then be provided for a 15km section of this study area, which it is considered represents a proportionate extent of the study area and the limit within which any potential significant effects might occur.

5.3.15 For the cumulative assessment, consideration was initially given to a 60km radius from the site, as recommended by SNH best practice guidance. Following this review, it is proposed that a 20km detailed study area be adopted to consider cumulative effects, which is considered represents a proportionate extent of the study area and the limit within which any potential significant cumulative effects might occur. Cumulative sites within 20km of the site are illustrated on Figure 5.3 and listed in Table 5.1.

Table 5.1: Cumulative sites within 20km

Site Name	Status	Number of turbines	Height to Blade Tip	Distance and Direction from the Site
Gordonbush	Operational	35	110m	1.5km
Gordonbush Extension (as consented)	Consented	15	12no. x 130m and 3no. x 115m	2km
Gordonbush Extension (variation scheme)	In planning	11	149.9m	2km
Kilbraur	Operational	19	115m	8.5km
Kilbraur Extension	Operational	8	125m	9km

Proposed LVIA Viewpoint Locations

5.3.16 It is proposed that the 15 locations set out in Table 5.2 are included as viewpoints in the LVIA. The locations which are illustrated on Figure 5.1 represent visual receptors and character types at a range of distances and directions from the site.

5.3.17 It is acknowledged that the Proposed Development is located immediately south east of the Gordonbush Wind Farm. This operational scheme comprises of 35 no. turbines, 110 m to blade tip. An extension to the Gordonbush Wind Farm comprising 15 no. turbines (12no. x 130m and 3no. x 115m) has been granted consent. An application to vary this consent to 11no. turbines, 149.9m is currently in the process of being determined by the Energy Consents Unit. Around 5km to the south west, lies the operational Kilbraur Wind Farm (19no. 115m turbines) and its extension (8no. 125m turbines).

5.3.18 A comparative exercise of ZTV coverage between the Proposed Development and the turbines in the Gordonbush schemes has been undertaken to understand the potential cumulative effects of the Proposed Development in combination with the other schemes. This in turn has influenced the choice of viewpoint locations, a number of which have been purposefully chosen to replicate those that were included in the LVIA which was submitted with the application to vary the Gordonbush Extension scheme to 149.9m turbines.

Table 5.2: Proposed Assessment Viewpoints

No	Location	OS Grid Ref	Direction	Receptor Type
1	Doll	288433, 903280	South	Residents/ Road Users
2	Lower Brora	290965, 903639	South	Residents/ Road Users/ Recreational
3	A9, North Brora	290506, 904648	South	Residents/ Road Users
4	Beinn Dhorain*	292539, 915656	North-east	Recreational
5	Creag nam Fiadh*	284110, 923700	North	Recreational
6	Hope Hill*	277861, 918871	North-west	Recreational
7	Track to Ben Armine Lodge*	275899, 913789	West	Recreational
8	Brora to Rogart minor road near Sciberscross*	278487, 910447	West	Residents/ Road Users/ Recreational
9	Brora to Rogart minor road near Dalreavoch*	275550, 909090	West	Residents/ Road Users/ Recreational
10	Craggie Beg*	273869, 908142	West	Residents/ Recreational
11	Ben Horn*	280735, 906364	South -west	Recreational
12	Ben Bhraggie*	281355, 901011	South -west	Recreational
13	Viewing Point, on minor road near Skelbo Castle	279283, 895352	South	Recreational / Road Users
14	Dornoch, coastal footpath near Royal Dornoch Golf Club	280729, 889672	South	Residents/ Recreational
15	Portmahomack*	291545, 884832	South	Residents/ Road Users/ Recreational

denotes that the viewpoint replicates a location included in the Gordonbush Extension Variation LVIA.

5.3.19 Each of the representative viewpoints will be visited to evaluate the sensitivity of views. In addition, the study area will also be extensively visited to consider visibility of the Proposed Development as receptors move through the landscape.

5.3.20 The viewpoints will be used as the basis for determining the effects on visual receptors within the study area. The sensitivity of different receptor groups will be set out in the LVIA methodology.

5.3.21 The level of effect experienced by different visual receptor groups will be determined by considering in tandem the sensitivity and view with the magnitude of impact.

Visualisations

5.3.22 For each of the viewpoints, visualisations will be prepared in line with Visualisation Standards for Wind Energy Developments (The Highland Council, July 2016) and Visual Representation of Wind farms – Version 2.2 (SNH, February 2017). There are however a number of matters relating to the visualisations which we would be grateful for further clarification on the approach to be taken. These are set out in the Key Questions section below.

5.4 Baseline Conditions

Landscape Character

5.4.1 Scottish Natural Heritage (SNH) published an updated national set of Landscape Character Types (LCTs) in early 2019. This 2019 national LCT map and associated LCT Descriptions now supersede the earlier 1990s SNH landscape character descriptions and mapping.

5.4.2 The site lies within LCT 135 'Rounded Hills – Caithness and Sutherland'. The 'Key Characteristics' of this area are defined by SNH as follows:

- *'Rolling hills forming broad, subtly rounded summits but with some more pronounced hills also occurring, these often featuring steeper slopes along the coast or where truncated by deep glens.*
- *Hills cut by numerous narrow burns and small lochans lie within dips, corries and on plateau summits.*
- *Predominantly dense heather ground cover and moorland grasses, but also some areas of bog.*
- *Fragments of broadleaf woodland in inaccessible locations.*
- *Scarcely settled with a largely uninhabited interior and widely scattered crofts and farms on lower slopes adjoining straths and farmed landscapes.*
- *Narrow glens and lower hill slopes often rich in archaeology with features such as standing stones, brochs and medieval townships.*
- *Wind farms located in more accessible and generally lower rolling hills, either close to extensive forestry or the high voltage transmission line aligned broadly parallel to the south-east Sutherland coast.*
- *Convex character of hill slopes limiting distant visibility and views of the hill tops when travelling through the landscape.*
- *Views into the interior of the hills very restricted.*

- *Strong sense of wild character can be experienced within the more remote and little modified parts of this landscape'.*

5.4.3 Other national character types covering the landscape in the vicinity of the site include: LCT 134 – 'Sweeping Moorland and Flows - Caithness & Sutherland'; LCT 142 – 'Strath - Caithness & Sutherland'; and LCT 144 – 'Coastal Crofts and Small Farms - Caithness & Sutherland'.

5.4.4 The 'Highland Council Onshore Wind Energy Supplementary Guidance' (November, 2016), did not consider this part of Sutherland within its analysis of the sensitivity of the landscape.

5.4.5 The LVIA will therefore include an assessment of the sensitivity of the landscape character, based on each of the national LCTs, before going on to provide an assessment of the potential for the Proposed Development to result in significant effects on the character of each.

Landscape Designations

5.4.6 The site lies within the 'Loch Fleet, Loch Brora and Glen Loth' Special Landscape Area (SLA). The Highland Council Assessment of Highland Special Landscape Areas (2011) identified this area of 210.4km^2 as follows:

"Location and Extent: Lying along the east coast of Sutherland, this area stretches from the southern slopes of Strath Ullie in the north to Loch Fleet in the south, including areas of coastal shelf and interior moorland and hills"

"Overview: This is an area of rolling moorland hills, punctuated by a series of southeast orientated glens, straths and lochs, and edged to a narrow strip of farmed coastal shelf running along the shoreline. The character of this area is distinguished by its composition of contrasting landscape features – the contrasting landform, landcover and landscape pattern that empathise the distinction of each other"

5.4.7 The Assessment also considered the *'Key Landscape and Visual Characteristics'* and *'Special Qualities'* of the SLA before identifying a series of matters relating to its *'Sensitivity to change'* which included the following:

- *"Additional large scale features could, in combination with the existing wind turbines and overhead electricity line to the west of the SLA, could diminish the perceived scale of the hills and their qualities of wildness and tranquillity.*

- *Additional features within the moorland hills could appear to compromise the simplicity of the existing land cover and landform shape".*

5.4.8 The potential for landscape and visual effects in relation to the SLA will be considered appropriately in the LVIA.

5.4.9 With regard to other landscape designations, the site lies outwith any National Parks or National Scenic Areas (NSAs), with the nearest NSA, Dornoch Firth, lying around 20km away. It also lies outwith Wild Land, with the nearest, Area 35: Ben Klibreck - Armine Forest, lying around 4km away, beyond the exiting Gordonbush Wind Farm. The nearest Gardens and Designed Landscape is Dunrobin Castle, around 10km to the south. Landscape designations in the vicinity of the site are illustrated on Figure 5.2.

Visual Receptors

5.4.10 The principal settlement in the nearby locality surrounding the site is Brora, which lies on the coast, around 9.2km to the south of the site. There would also be the potential for some views from the local road network, including the A9, the A897 and the highland railway as it runs north towards Wick and Thurso, and south to Inverness. It is acknowledged there are also locally promoted walking routes in the vicinity of Brora, including along the coastline, with the beaches north and south of Brora also likely to attract visual receptors.

5.4.11 A detailed consideration of the potential for impacts to the visual amenity of receptors in the landscape surrounding the site will be set out in the LVIA. This visual assessment will be informed by a selection of representative assessment viewpoints, which are discussed further in the methodology section, each of which will be illustrated with visualisations prepared in line with The Highland Council and SNH best practice guidance.

Residential Visual Amenity

5.4.12 A detailed consideration with regard to residential visual amenity will also be given within in the LVIA. However, as there are no residential properties located within 2km of the Proposed Development, it is not proposed that a separate standalone Residential Visual Amenity Study (RVAS) will be undertaken as part of the LVIA.

5.5 Potential Effects

5.5.1 It is proposed that the LVIA will consider the potential effects of the Proposed Development upon:

- individual landscape features and elements;
- landscape character; and
- visual amenity and the people who view the landscape.

5.5.2 The LVIA will considers the effects at three different stages in the lifetime of the Proposed Development:

- during construction of the Proposed Development;
- during the operational lifetime of the Proposed Development; and
- during decommissioning of the Proposed Development.

5.5.3 Effects during the first and third of these phases are considered to be temporary and would have a short duration. Effects associated with the operational phase of the Proposed Development are considered to be long term, reversible effects.

5.6 Potential Mitigation

5.6.1 As discussed in best practice guidance for EIA, mitigation measures may include:

- avoidance of effects;
- reduction in magnitude of effects; and

- compensation for effects (which may include enhancements to offset any adverse effects).

5.6.2 The primary mitigation adopted in relation to landscape and visual matters is likely to be embedded within the design of the Proposed Development and will comprise the consideration given to avoiding and minimising landscape and visual effects during the evolution of the Proposed Development layout. This is sometimes referred to as 'mitigation by design'.

5.7 Questions

5.7.1 The following are what are thought to be the key issues which require consideration by the consultees:

- **Are there any comments on the proposed study areas?**
- **Are there any comments on the proposed list of viewpoint locations?**
- **Are there any further wind farm sites, to those listed in Table 5.1, to consider as part of the cumulative assessment?**
- **It is noted that within 'Visualisation Standards for Wind Energy Developments (July 2016)' the need to provide 'monochrome' images (a black and white photo with red turbines) is set out to be 'if required' by The Highland Council. Can The Highland Council provide confirmation for which viewpoints, if any, this will be required?**
- **It is also noted that there is also a requirement within 'Visualisation Standards for Wind Energy Developments (July 2016)' for any existing cumulative turbines in the view to be digitally removed and re-photomontaged back into the photograph so that they are orientated to face towards the viewer. Can The Highland Council confirm if this will be required if the turbines are already orientated to face towards the viewer in the baseline photograph?**
- **Do you agree that residential visual amenity can be considered within the LVIA and (that for the reasons detailed in 5.4.12) a standalone Residential Visual Amenity Study (RVAS) is not required?**
- **Do you agree that the proposed scope of assessment is appropriate?**

6 Archaeology and Cultural Heritage

6.1 Introduction

6.1.1 This section provides an overview of the Archaeology and Cultural Heritage context for the Proposed Development. It sets out the relevant legislative and policy framework and the guidance relevant to the EIA. The methodology that will be employed in the assessment is set out and an initial description of the baseline is provided.

6.2 Legislation, Policy and Guidance

6.2.1 The assessment will be prepared following the advice and guidance in the following documents:

Legislation

- Ancient Monuments and Archaeological Areas Act 1979;
- Planning (Listed Buildings and Conservation Areas (Scotland) Act 1997 (as amended by Historic Environment (Amendment) (Scotland) Act 2011);
- Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013; and
- Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

Planning Policies

- National Planning Framework (NPF 3);
- Scottish Planning Policy (SPP) (2014);
- Historic Environment Policy for Scotland (HEPS) (2019) (HES 2019); and
- Highland-wide Local Development Plan (2012) - Policy 57 Natural, Built and Cultural Heritage.

Guidance

- SNH and Historic Environment Scotland (2018) 'Environmental Impact Assessment Handbook';
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists, 2014);
- Designation Policy and Selection Guidance (Historic Environment Scotland, 2019);
- Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016);
- The Highland Council 'Standards for Archaeological Work' (2012);
- The Highland Council 'Historic Environment Strategy' (2013) (THC 2013); and
- Planning Advice Note 2/2011: Planning and Archaeology (PAN 2/2011).

6.3 Proposed Scope of Assessment

6.3.1 The EIA Report will include a chapter that will present an assessment of the Proposed Development's potential effects upon archaeology and cultural heritage assets. The assessment will consider the potential for direct (i.e. physical) effects on the cultural heritage within the Proposed Development site, arising from construction activities, and effects upon the settings of heritage assets with statutory and non-statutory designations in the wider landscape surrounding the Proposed Development.

Study Areas

6.3.2 Two study areas will be used for the assessment:

- The Inner Study Area: the Proposed Development site, defined by the site red line boundary, within which turbines and associated infrastructure are proposed, will form the study area for the identification of heritage assets that could receive direct effects arising from the construction of the Proposed Development.
- The Outer Study Area: a wider study area extending 10km from the outermost finalised proposed turbine locations will be used for the identification of cultural heritage assets whose settings may be affected by the Proposed Development (including cumulative effects). Views towards any assets identified as having settings sensitive to change will also be considered, even where no visibility is predicted from the asset. The wider ZTV will also be assessed to identify any designated assets beyond 10km that have settings that may be especially sensitive to the Proposed Development.

Issues Scoped Out of the Assessment

6.3.3 In order to provide a proportionate EIA that focuses on the likely significant effects on archaeology and cultural heritage arising from the Proposed Development it is proposed that the following will be scoped out:

- Impacts on the settings of heritage assets beyond 10km of the Proposed Development will be scoped out, as most assets beyond that distance will be too far distant to have their settings significantly adversely affected by the Proposed Development. An initial appraisal of the blade tip height ZTV (Figure 6.1) has identified no assets beyond 10km that could have their settings adversely affected by the Proposed Development.
- Assessment of impacts on the settings of Category C Listed Buildings beyond 5km will be scoped out as it is considered that, for these locally important designations, beyond that distance their settings will not be significantly adversely affected.

Desk-based Assessment

6.3.4 A detailed desk-based assessment will be carried out, drawing on existing archive records (Highland Historic Environment Record), historic maps, and modern high-resolution aerial photography (GoogleEarth) to identify sites and areas that have archaeological and historic environment potential. The following sources will be consulted:

- Historic Environment Scotland Spatial Data Warehouse: for up-to-date data on the locations and extents of Scheduled Monuments, Listed Buildings, Conservation Areas, Inventory status Garden and Designed Landscapes and Inventory status Historic Battlefields;
- Highland Council Historic Environment Record (HER): for a digital database extract in GIS for all assets within 10km of the Proposed Development site boundary;
- The National Record for the Historic Environment (NRHE) database (Canmore): for any information additional to that contained in the HER;

- Relevant bibliographic references will be consulted to provide background and historic information;
- Map Library of the National Library of Scotland: for Ordnance Survey maps and other historical map resources; and
- Historic Land-Use Assessment Data for Scotland (HLAMap): for information on the historic land use character of the Proposed Development site and the surrounding area.

Field Surveys

6.3.5 A targeted walk-over field survey within the Inner Study Area will be carried out once an initial infrastructure layout has been developed. The field survey will focus on the heritage assets that may be affected by the Proposed Development; in particular, those in proximity to components of the infrastructure and those along the proposed site access. The survey will be undertaken in order to:

- locate and record the baseline character and condition of heritage assets identified through the desk-based assessment;
- identify any others not revealed through the desk-based study;
- identify any area of archaeological potential; and
- assess the heritage value of the heritage assets identified through the desk-based assessment and field survey.

6.3.6 Site visits to heritage assets in the Outer Study Area will be undertaken to assess, with the aid of wireline visualisations, the predicted impact of the Proposed Development on their settings. Site visits will include any assets specifically identified by consultees as requiring assessment and those identified through analysis of the blade tip height ZTV that lie within 5km where it is considered, on the basis of professional judgement, that the impact on their settings could be significant.

6.3.7 The effects of the Proposed Development on heritage assets will be assessed on the basis of their type (direct effects, impacts on setting and cumulative impacts) and nature (adverse or beneficial). The assessment will take into account the value/sensitivity of the heritage asset and its setting and the magnitude of the predicted impact.

- Adverse impacts are those that detract from or reduce cultural significance or special interest of heritage assets.
- Beneficial impacts are those that preserve, enhance or better reveal the cultural significance or special interest of heritage assets.

Assessment Methodology

6.3.8 The assessment of significance of effects will be undertaken using two key criteria: the sensitivity of the cultural heritage asset and the magnitude of the predicted impact, which measures the degree of change to the baseline condition of an asset resulting from the Proposed Development.

Assigning Sensitivity to Heritage Assets

6.3.9 Cultural heritage assets are given weight through the designation process. Designation ensures that sites and places are recognised by law through the planning system and other regulatory processes. The level of protection and how a site or place is managed varies depending on the type of designation and its laws and policies (HES, 2019).

6.3.10 Table 6.1 summarises the relative sensitivity of key cultural heritage assets (and their settings) relevant to the Proposed Development (excluding, in this instance, World Heritage Sites and Marine Resources).

Table 6.1: Sensitivity of Heritage Assets

Sensitivity of Asset	Definition/Criteria
High	Assets valued at an international or national level, including: Scheduled Monuments Category A Listed Buildings Inventory Gardens and Designed Landscapes Inventory Historic Battlefields Non-designated assets that meet the relevant criteria for designation
Medium	Assets valued at a regional level, including: Archaeological sites and areas that have regional value (contributing to the aims of regional research frameworks) Category B Listed Buildings Conservation Areas
Low	Assets valued at a local level, including: Archaeological sites that have local heritage value Category C listed buildings Unlisted historic buildings and townscapes with local (vernacular) characteristics
Negligible	Assets of little or no intrinsic heritage value, including: Artefact find-spots (where the artefacts are no longer in situ and where their provenance is uncertain) Poorly preserved examples of particular types of features (e.g. quarries and gravel pits, dilapidated sheepfolds, etc)

Criteria for Assessing the Significance of Effects

6.3.11 The magnitude of impact (adverse or beneficial) will be assessed in the categories, high, medium, low and negligible and described in Table 6.2.

Table 6.2: Magnitude of Change

Magnitude of Impact	Criteria	
	Adverse	Beneficial
High	Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of the asset's cultural significance. Changes that substantially detract from how a heritage asset is understood, appreciated and experienced.	Preservation of a heritage asset in situ where it would otherwise be completely or almost completely lost. Changes that appreciably enhance the cultural significance of a heritage asset and how it is understood, appreciated and experienced.
Medium	Changes to those elements of the fabric or setting of a heritage	Changes to important elements of a heritage asset's fabric or setting,

	asset that contribute to its cultural significance such that this quality is appreciably altered. Changes that appreciably detract from how a heritage asset is understood, appreciated and experienced.	resulting in its cultural significance being preserved (where this would otherwise be lost) or restored. Changes that improve the way in which the heritage asset is understood, appreciated and experienced.
Low	Changes to those elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this quality is slightly altered. Changes that slightly detract from how a heritage asset is understood, appreciated and experienced.	Changes that result in elements of a heritage asset's fabric or setting detracting from its cultural significance being removed. Changes that result in a slight improvement in the way a heritage asset is understood, appreciated and experienced.
Negligible	Changes to fabric or setting of a heritage asset that leave its cultural significance unchanged and do not affect how it is understood, appreciated and experienced.	

6.3.12 The sensitivity of the asset (Table 6.1) and the magnitude of the predicted impact (Table 6.2) will be used to inform the professional judgement of the potential significance of the resultant effect. Table 6.3 summarises the criteria for assigning significance of effect. Where two outcomes are possible through application of the matrix and where a potentially significant effect may result, professional judgement supported by reasoned justification, will be employed to determine the level of significance.

Table 6.3: Significance of Effect

Magnitude of Impact	**Sensitivity of Asset**			
	High	Medium	Low	Negligible
High	major	major / moderate	moderate / minor	minor
Medium	major / moderate	moderate	minor	minor / negligible
Low	moderate / minor	minor	minor / negligible	minor / negligible
Negligible	minor	minor / Negligible	minor / negligible	negligible

6.3.13 Major and moderate effects are considered to be 'significant' in the context of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations). minor and negligible effects are considered to be 'not significant'.

Assessment of Effects on Setting

6.3.14 Historic Environment Scotland's guidance document, 'Managing Change in the Historic Environment: Setting' (HES 2016), notes that:

"Setting can be important to the way in which historic structures or places are understood, appreciated and experienced. It can often be integral to a historic asset's cultural significance."

"Setting often extends beyond the property boundary or 'curtilage' of an individual historic asset into a broader landscape context".

6.3.15 The guidance also advises that:

"If proposed development is likely to affect the setting of a key historic asset, an objective written assessment should be prepared by the applicant to inform the decision-making process. The conclusions should take into account the significance of the asset and its setting and attempt to quantify the extent of any impact. The methodology and level of information should be tailored to the circumstances of each case".

6.3.16 The guidance recommends that there are three stages in assessing the impact of a development on the setting of a historic asset or place:

- Stage 1: identify the historic assets that might be affected by the proposed development;
- Stage 2: define and analyse the setting by establishing how the surroundings contribute to the ways in which the historic asset or place is understood, appreciated and experienced; and
- Stage 3: evaluate the potential impact of the proposed changes on the setting, and the extent to which any negative impacts can be mitigated.

6.3.17 Following this approach, the turbine blade tip and hub height ZTVs for the Proposed Development will be used to identify those heritage assets from which there would be theoretical visibility of one or more of the proposed wind turbines.

- Scheduled Monuments, Category A and B Listed Buildings, Conservation Areas, Inventory Gardens and Designed Landscapes and Inventory Historic Battlefields, where present within the blade tip height ZTV and within 10km of the outermost turbines, will be included in the assessment.
- Category C Listed buildings within the blade tip height ZTV and within 5km of the outermost turbines will be included in the assessment.

6.4 Baseline Conditions

Inner Study Area

6.4.1 Much of the Proposed Development area, in particular the area where it is proposed to site the turbines, is at a high altitude (above 350m), where the archaeological potential is likely to be low or negligible. A building and enclosure (MHG 19520) and two aircraft crash sites, one (MHG 30842) on the upper slopes of Col Bheinn, at 495 m AOD and another on Carn Garbh (MHG 30819), between 400m and 450m AOD, are the only appreciable constraints within the proposed turbine area. A possible shieling hut (MHG 38884) alongside the Kintradwell Burn lies close to a watercourse at 335m AOD and two post medieval settlement sites (MHG13157 and MHG13158) lie between the Kintradwell Burn and the Badenahauglish Burn, between 180m and 325m AOD. A third recorded aircraft crash site (MHG 33851) appears, from the description given, to possibly be a duplicate entry for the identified crash site on Col Bheinn (MHG 30842).

6.4.2 Along the lower slopes of Asc na Grèine and Creagan Mor, above and to the northwest of the A9 there is a spread of prehistoric and post-medieval settlement remains between the Clynmilton Burn near Achrimsdale and Glen Loth at Lothbeg. Prehistoric remains include hut circles and associated field systems at Clynemilton (MHG 9798) and Kintradwell (MHG 9786),

and a souterrain (MHG9779) and broch (MHG 9778) at Kintradwell. The broch is also a Scheduled Monument (Cinn Trolla broch (SM1847)). Post-medieval remains include farmsteads and field systems; such as those at Kintradwell (MHG 13159), Braeval (MHG 10478), Creagan Mor (MHG 9788) and Lothbeg (MHG 9776).

Outer Study Area

6.4.3 There are no Conservation Areas or Historic Battlefields within 10km of the Proposed Development. There is one Inventory Garden and Designed Landscape (Dunrobin Castle) and one Property in Care (Carn Liath) within 10km of the Proposed Development. Initial appraisal of the scoping layout blade tip height ZTV indicates that there will be no visibility of the Proposed Development from Carn Liath and only limited visibility from within Dunrobin Castle Garden and Designed Landscape and no visibility from Dunrobin Castle itself or its proximity.

6.4.4 There are 29 Scheduled Monuments within 10km of the Proposed Development including: Cinn Trolla broch (SM1847); which is within the Proposed Development site boundary, but on the coast side of the A9 road and outwith the scoping layout ZTV. Eight of the Scheduled Monuments are within 5km of the Proposed Development; of these only two have any predicted visibility of the Proposed Development, based on the scoping layout ZTV.

6.4.5 There are 58 Listed Buildings within 10km of the Proposed Development: of which one (Loth Parish Church (LB7149)) is Category A Listed; 35 are Category B Listed; and 22 are Category C Listed. Only three Category B Listed Buildings and two Category C Listed Buildings are within 5km of the Proposed Development.

6.4.6 Beyond 10km, the category B Listed Ben Bhragaidh Monument to First Duke of Sutherland (LB7063), 12.4 km from the Proposed Development, will be included in the assessment for a potential impact on its setting.

6.5 Potential Effects

6.5.1 Potential significant effects would include:

- Direct impacts on any of the settlement remains (prehistoric and post-medieval), of regional / local heritage importance and medium / low sensitivity, that survive along the slopes of Asc na Grèine and Creagan Mor within the Proposed Development site, and which are identified as potential design constraints; and
- Impacts (including cumulative impacts) on the settings of designated heritage assets in the Outer Study Area. A list of proposed visualisation viewpoints is provided

Table 6.4: List of proposed visualisation viewpoints

Asset Name	Designation	NGR	Comment
Kildonan Burn,hut circles & field system (SM2843)	Scheduled Monument	NC 9140 2210	Cumulative wirelines (with Gordonbush)
Duchary Rock, fort (SM1854)	Scheduled Monument	NC 8510 0480	Cumulative wirelines (with Gordonbush & Kilbruar)
Kilbraur, broch 135m SSW of (SM13646)	Scheduled Monument	NC 8229 0987	Cumulative wirelines (with Gordonbush & Kilbruar)
Clach Mhic Mhios, standing stone, Glen Loth 4000m N of Lothbeg Bridge (SM1778)	Scheduled Monument	NC 94040 15082	Cumulative wirelines (with Gordonbush)
Loth Parish Church (LB7149)	Category A Listed	NC 97093 11380	Wireline
Ben Bhragaidh Monument to First Duke of Sutherland (LB7063)	Category B Listed	NC 81355 01011	LVIA viewpoint - Cumulative (with Gordonbush & Kilbruar)

6.6 Potential Mitigation

Design mitigation

- Avoidance of identified areas of constraint during the design of the turbine layout and the onsite infrastructure; and
- Routing of site access from the A9 to avoid areas of constraint, wherever practicable.

Construction Phase mitigation

- Fencing off/marking out areas of constraint for avoidance during the construction phase;
- Archaeological evaluations or set piece excavations where heritage assets cannot be avoided; and
- Watching briefs/archaeological monitoring in archaeologically sensitive areas.

6.7 Questions

6.7.1 **Do you agree with the proposed Study Areas?**

6.7.2 **Do you agree that the sources to be employed in the desk-based assessment are sufficient to establish a reliable baseline?**

6.7.3 **Do you agree that the archaeological potential of the high ground, around the proposed wind turbine development site, is low?**

6.7.4 **Do you agree with the proposed approach to a targeted walk-over survey, focussing on areas of archaeological sensitivity?**

6.7.5 **Do you agree with the proposed methodology for the assessment of effects on Archaeology and Cultural Heritage interests?**

6.7.6 **Do you agree with the proposed list of visualisations intended to accompany the assessment and the type of visualisation proposed in each case?**

6.7.7 **Are there any other particular heritage assets that you would wish to add to the list of visualisations and why?**

7 Ecology and Nature Conservation

7.1 Introduction

7.1.1 The non-avian Ecological Impact Assessment (EcIA) will assess the potential for likely significant effects on features above a certain value during the construction, operational and decommissioning phases of the Proposed Development.

7.1.2 The assessment of the avian baseline and potential impacts will be presented in a separate ornithological chapter (see Chapter 8).

7.1.3 The EcIA will be presented within the Ecology and Nature Conservation chapter of the EIA Report, which will also include the following:

- The legislative, planning and good practise framework of the assessment;
- A summary of consultation responses from key stakeholders;
- Methodology;
- A description of the existing ecology baseline for the Proposed Development and wider ecological study area, including habitat types and evidence of any protected or otherwise notable species, e.g. national and European Protected Species and priority species and habitats listed on the Scottish Biodiversity List (Scottish Government, 2013) or Local Biodiversity Action Plan;
- An assessment of the potential significant ecological effects of the Proposed Development in the presence of standard mitigation;
- Proposals for any additional mitigation or compensation to ameliorate identified potential effects (where appropriate); and
- An assessment of residual effects following the implementation of mitigation.

7.2 Legislation, Policy and Guidance

7.2.1 The ecology assessment will be carried out in accordance with the following legislation:

- European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora;
- European Union Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (“Water Framework Directive”);
- Environmental Impact Assessment Directive 2014/52/EU;
- The Wildlife and Countryside Act 1981 (as amended);

- The Protection of Badgers Act 1992 (as amended);
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (''The Habitats Regulations'');
- The Nature Conservation (Scotland) Act 2004 (as amended); and
- The Wildlife and Natural Environment (Scotland) Act 2011 (as amended).

7.2.2 In terms of policy, the assessment will review the local, regional and national planning framework including:

- National Planning Framework 3 (Scottish Government, 2014a);
- Scottish Planning Policy (SPP; Scottish Government, 2014b);
- Relevant authority and local structure plans;
- The Scottish Biodiversity List (Scottish Government, 2013); and
- The Highland Biodiversity Action Plan (Highland Environment Forum 2015).

7.2.3 In terms of guidance, the assessment will be undertaken in line with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018), which represent current best practice and are endorsed by key stakeholders. It will also give due regard to other relevant guidance, such as the SEPA guidance on the assessment of groundwater dependent terrestrial ecosystems (GWDTEs) (SEPA, 2017) and the SNH guidance on bats (SNH, 2019).

7.3 Preliminary Consultation with Scottish Natural Heritage (SNH)

7.3.1 We have undertaken consultation with SNH regarding the bat assessment, notably in light of their recent survey guidance (SNH, 2019), which deviates from previous guidance in calling for the exclusive use of full-spectrum (f-s) bat detectors as opposed to other types, e.g. zero-crossing (z-c) detectors. In an email on 8th May 2019, SNH state that while they do not support deviations from the January 2019 guidance of using f-s detectors for bat surveys, they nevertheless accept that in the first year of implementation of the guidance there can be some flexibility over the type of detectors being used in some situations:

"*Although there may be a reduced bat fauna in East Sutherland we do not consider that this justifies the use of z-c rather than f-s detectors. It's equally important to accurately record the level of activity from the species that are there, as it is to detect all the species that may be present. Furthermore, common & soprano pips have both been reassessed in the new guidance as high risk. We therefore do not consider that having a limited range of species is a justification for not using full-spectrum detectors.*

As this is the first year of the guidance implementation, if you are having difficulty sourcing detectors, what would be useful would be to deploy a few full-spectrum detectors alongside the z-c detectors at a subset of locations, so that detectability can be calibrated. So we would strongly recommend investing in some full-spectrum detectors to use alongside some of the z-c detectors this year."

7.3.2 Further details on the approach to bat assessments is provided in sections 7.4.7 to 7.4.12.

7.4 Proposed Scope of Assessment

Desk Study

7.4.1 A comprehensive desk study will be undertaken to collate existing information on statutory nature conservation designations (listed for non-avian biological features) within 10km of the proposed turbine development area and 2km for non-statutory designations. It will also include collation of records of protected or otherwise notable species dating from within the last 10 years and located within 2km of the planning boundary, although this will be extended to 10km for bat roosts. As part of this exercise we will contact the Bat Conservation Trust, Highland Biological Recording Group, Scottish Badgers, and review information from online databases and EIA Reports for other schemes in the local area, e.g. Gordonbush Wind Farm.

Extended National Vegetation Classification (NVC) Survey

7.4.2 A botanical survey, carried out to National Vegetation Classification (NVC) standard, will be completed within the site and a 250m buffer (access permitting). The survey will follow the standard methodology set out in the NVC Users' Handbook (Rodwell, 2006) and plant communities will be identified from representative quadrat samples with reference to the standard community descriptions and constancy tables in Rodwell (1991 *et seq*.). The survey will exclude highly modified habitats, such as conifer plantations and agricultural areas, which will be mapped using the Joint Nature Conservation Committee (JNCC) Phase 1 habitat survey method (JNCC, 2010).

7.4.3 Communities will be evaluated in terms of their nature conservation interest, e.g. through inclusion on the Scottish Biodiversity List (SBL) or the Highland Biodiversity Action Plan (BAP), as well as in terms of potential groundwater dependence (SEPA, 2017).

7.4.4 If the layout of the wind farm results in turbines or borrow pits being proposed within 250m of a potential GWDTE, or other wind farm infrastructure being proposed within 100m of a potential GWDTE, then further assessment will be undertaken to verify if the potential GWDTE is indeed groundwater dependent.

7.4.5 The results of the survey will be shown as both an NVC map of plant communities and a Phase 1 habitat map.

7.4.6 The NVC survey will be 'extended' to assess the potential need for ecological surveys in addition to those described below. For example, although aquatic or fisheries surveys are not included within the scope of assessment, but this will re-evaluate this during the NVC survey.

Bat Surveys

7.4.7 Bat surveys are currently ongoing that are commensurate with a 'low' risk site.

7.4.8 There are no trees or structures within the turbine area, but trees and structure are present along the access track, for which a Preliminary Roost Assessment (PRA) of all trees and structures within 30m will be carried out in line with the guidelines issued by the Bat Conservation Trust (BCT) (Collins, 2016). If potential roost sites are identified, then it may be necessary for additional emergence/re-entry surveys to be undertaken.

7.4.9 The recent SNH bat survey guidance (2019) places more emphasis on static surveys than previous guidance. It is now requested that statics need to be deployed for a minimum of 10

consecutive nights per season (spring, summer and autumn), and this approach is being followed. However, owing to the unreliable nature of weather in this region of Scotland, static units will be deployed for 15 days to increase the likelihood that 10 consecutive days of optimal weather conditions are captured during each static deployment. A weather station has been set up to log temperature and humidity, barometric pressure, wind speed and direction, dew point and rainfall. As per the new SNH guidance (2019), a total of 14 static units are employed in order to cover the proposed turbine locations effectively.

7.4.10 Given the open moorland habitats surrounding the proposed array, with no woodland present, we are not proposing to undertake static detector deployment at height.

7.4.11 The new SNH guidance (2019) reduces the emphasis on transect surveys to assess for onshore wind farm developments. Considering that the turbine array is located solely within the upper open ground of the wider estate, with very few features of potential interest to bats, along with the dangerous nature of conducting transect surveys at night in a remote location with such steep terrain, as well as the limited number of different species of bat found in northern Scotland, we are not proposing to undertake transect surveys.

7.4.12 The survey uses full spectrum detectors alongside z-c detectors to allow the calibration recommended by SNH.

Protected Mammals Survey

7.4.13 A combined survey investigating for signs of protected mammals, including but not restricted to badger (*Meles meles*), otter (*Lutra lutra*), water vole (*Arvicola amphibius*) and pine marten (*Martes martes*), will be carried out across the site and a 50m buffer, although the survey buffer will be increased to 250m for otter due to the larger distance over which potential disturbance impacts can occur. The survey will be based on the standard methods described in Chanin (2003), Strachan *et al*. (2011), and Scottish Badgers (2018). The methods involve searching for field evidence, such as feeding signs, latrines and individual droppings, burrows/resting places, footprints, runways in vegetation and sightings of the animals themselves.

7.4.14 If potential pine marten dens, otter holts, badger setts are recorded, or if evidence is recorded of wildcat (*Felis sylvestris*) or red squirrel (*Sciurus vulgaris*), further targeted survey work could be required (such as camera trapping) to confirm the level of usage of a given feature and to provide the necessary information needed in support of a protected species licence application, should one be required. The scope of any such further surveys would depend on the nature of the evidence recorded and its location within the survey area relative to the emerging layout of the Proposed Development.

Ecological Impact Assessment

7.4.15 In accordance with the CIEEM (2018) guidelines, the Ecology and Nature Conservation chapter for the Proposed Development will summarise the non-avian ecology baseline, with the findings of the survey work detailed in technical reports, which will be appended to the EIA Report. Features then will be evaluated using the CIEEM (2018) criteria, and features of local or higher value that may be susceptible to development at the site will be brought forward for an assessment of impacts during the construction, operational and decommissioning phases, assuming the presence of standard mitigation measures. Additional mitigation may then be identified where any significant impacts are predicted. The potential for cumulative ecological effects will also be assessed, which we consider will

include other wind farm schemes within 10km of the application boundary. Any significant (beneficial or adverse) residual effects will be clearly presented and discussed appropriately.

7.4.16 Although Moray Firth SAC abuts the planning boundary east of the A9 trunk road, the potential for significant effects on the qualifying features (i.e. bottlenose dolphin and subtidal sandbanks) is very unlikely. We therefore do not consider that a Habitats Regulation Assessment (HRA) will be required.

7.5 Baseline Description

7.5.1 Aerial photography suggests that the proposed turbine development area comprises a range of upland habitats, including agricultural grassland, semi-natural grassland, peatland habitats and watercourses, with plantation woodland also occurring along the proposed site access from Kintradwell on the A9. A number of properties, mainly associated farm buildings, are interspersed across the local area, but none is present within 200m of the proposed turbine development area.

7.5.2 Loth Gorge Site of Special Scientific Interest (SSSI) and Ballinreach Coastal Gorges SSSI, both of which are designated for upland birch woodland, are located on the eastern and south-eastern site boundaries, respectively, but neither is within proposed works areas. Other statutory designations for non-avian biological features occur in the local area, including Moray Firth Special Area of Conservation (SAC), which is designated for bottlenose dolphin (*Tursiops truncatus*) and subtidal sandbanks, and which abuts the southern application boundary. Other statutory designations occur in the wider local area.

7.5.3 The site and/or local area is likely to support a range of protected or otherwise notable species, such as otter, water vole and reptiles.

7.6 Potential Effects

7.6.1 The key ecology and nature conservation issues to be considered with respect to the Proposed Development are likely to include the following:

- direct mortality of fauna during construction, operation and decommissioning;
- behavioural changes of fauna during operation;
- habitat loss through land-take;
- fragmentation of existing habitats;
- disturbance during construction and decommissioning; and
- pollution via road drainage and runoff during all development phases.

7.6.2 Additionally, for species relying on aquatic resources potentially affected by watercourse crossing and surface water runoff, the following potential significant effects are also considered:

- point source and diffuse pollution;
- increased sediment loading;
- decreased habitat complexity;
- habitat fragmentation; and

- changes to discharge regime.

7.7 Mitigation and Compensation

7.7.1 If it is considered that mitigation is necessary to reduce any adverse ecological effects, then an integrated mitigation and enhancement package will be proposed which will address ecological effects and which reflects local objectives in terms of biodiversity and the enhancement of environmental character. During the Proposed Development design and EIA process, mitigation measures will follow the recognised hierarchy of avoidance, reduction, enhancement, and compensation.

7.7.2 Proposals will also be outlined for a Habitat Management Plan (HMP) to be implemented during the operational phase of the proposed development if required. The scope of an outline HMP will be defined once baseline surveys are complete and the EcIA has been undertaken.

7.8 Questions

7.8.1 **Do you agree that it is appropriate to scope out HRA?**

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

8 Ornithology

8.1 Introduction

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

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

8.2 Legislation, Policy and Guidance

8.2.1 The legislation and policies which are directly relevant to the assessment of ornithological effects have been summarised below. Refer to Chapter 4 (Planning Policy Context), for planning policies relevant to the Proposed Development.

8.2.2 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.

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

- Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive);

- The Nature Conservation (Scotland) Act 2004 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- Policy Advice Note PAN 1/2013 – Environmental Impact Assessment (Scottish Government 2013).

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

- 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;
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester;
- Scottish Natural Heritage (SNH) (2000). Windfarms and birds: calculating a theoretical collision risk assuming no avoidance action;
- 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 https://www.nature.scot/sites/default/files/2019-05/Guidance%20-%20Good%20Practice%20during%20wind%20farm%20construction.pdf;
- SNH (2016). Assessing connectivity with Special Protection Areas;
- 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).

8.2.5 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.

8.3 Proposed Scope of Assessment

Study Area

8.3.1 The EIA Report will consider the following study areas[2]:

- 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) will be created from the turbine points using GIS Delunay triangulation[3] to create a wind farm area which will then be buffered by 500m (as per SNH 2017);
- scarce breeding birds[4] – 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);
- 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 on the basis of the SPA species scoped in to the assessment.

[2] 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.

[3] 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

[4] 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.

Desk Study

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

- Highland Raptor Study Group – provision of historic raptor nest locations and occupancy;
- SNHi Information Service[5] – information on Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs) and Ramsar sites; and
- any relevant Environmental Statements/EIA reports or technical reports from other developments or proposed developments in the local area.

Assessment Methods

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

8.3.4 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; and
- 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

8.3.5 The EIA Report will include a chapter containing 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.

8.3.6 Effects on potential Important Ornithological Features (IOFs) (excluding SPAs but including SSSIs) will be assessed in relation to the species' reference population, conservation status,

[5] https://sitelink.nature.scot/home

range and distribution. The assessment of potential effects will follow guidelines published by CIEEM (2018) and SNH (2017, 2018a).

8.3.7 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 likely 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.

8.3.8 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.

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

8.3.10 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). Furthermore, these predictions will be given with a level of confidence relative to the effect being assessed where required (in line with CIEEM 2018).

Methodology for Assessing Likely Significant Effects on an SPA or Ramsar site

8.3.11 As detailed in Section 8.4, there is potential for connectivity to exist with Natura 2000 designated sites (SPAs and Ramsar sites).

8.3.12 The method for assessing the significance of a likely effect on an SPA or Ramsar site is different from that employed for wider-countryside ornithological interests (detailed above). The Habitats Directive is transposed into domestic legislation by the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland). Regulation 48 includes a number of steps to be taken by the competent authority before granting consent (these are referred to here as a Habitats Regulations Appraisal, HRA). In order of application, the first four are:

- **Step 1**: consider whether the proposal is directly connected to or necessary for the management of the SPA (Regulation 48(1)(b));

- if not, **Step 2**: consider whether the proposal, alone or in combination, is likely to have a significant effect on the SPA (Regulation 48(1)(a));
- if so, **Step 3**: make an Appropriate Assessment of the implications for the SPA in view of that SPA's conservation objectives (Regulation 48(1)(a)); and
- **Step 4**: consider whether it can be ascertained that the proposal will not adversely affect the integrity of the SPA ("Integrity Test") having regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given (Regulation 48(5) and 48(6)).

8.3.13 It has already been established that the Proposed Development does not meet the criteria for Step 1.

8.3.14 The assessment on the integrity of the SPA or Ramsar site in relation to the Proposed Development will be presented in ornithology chapter of the EIA Report and the results of baseline surveys and scientific conclusions presented in the chapter will be used to inform the appraisal process, and potentially for the competent authority to conduct an Appropriate Assessment, if required.

Cumulative Effects

8.3.15 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 an NHZ level for breeding species.

Species Scoped Out of the Assessment

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

8.4 Baseline Conditions

Designated Sites

8.4.1 There are no statutory designations with ornithological features within the site. The desk-based study has identified five SPAs, ten SSSIs (underpinning the SPAs) and two Ramsar sites (associated with the SPAs) within 20km of the site (**Figure 8.1**).

- Caithness and Sutherland Peatlands SPA, 4.4km north west (underpinned[7] by the Coir'an Eoin SSSI, Skinsdale Peatlands SSSI and associated Caithness and Sutherland Peatlands Ramsar), **Table 8.1**;
- Lairg and Strath Brora Lochs SPA, 11.5km west (underpinned by Lairg and Strath Brora Lochs SSSI), **Table 8.2**;
- East Caithness Cliffs SPA, 13.6km north east (underpinned by Berriedale Cliffs SSSI), **Table 8.3**;
- Dornoch Firth and Loch Fleet SPA, 14.8km south west (underpinned[8] by Loch Fleet SSSI, Mound Alderwoods SSSI and associated Dornoch Firth and Loch Fleet Ramsar), **Table 8.4**; and
- Strath Carnaig and Strath Fleet Moors SPA, 18.5km south west (underpinned by Strath Carnaig and Strath Fleet Moors SSSI), **Table 8.5**. In addition, Loch Fleet is a Scottish Wildlife Trust (SWT) Reserve and a National Nature Reserve (NNR).

Table 8.1 – Qualifying Features of Caithness and Sutherland Peatlands SPA (and underpinning Coir'an Eoin SSSI[a], Skinsdale Peatlands SSSI[b] and Caithness and Sutherland Peatlands Ramsar)

Feature	Qualifying Feature Category	Condition	Description
Black-throated diver breeding	SPA	Favourable maintained: June 2018	Breeding population of national importance: 26 pairs (16.3% of UK population).
Common scoter breeding	SPA	Unfavourable declining: June 2013	Breeding population of national importance: 27 pairs (<0.1% of Western Siberia/Western & Northern Europe/North-western Africa population).
Dunlin breeding	SPA, SSSI[b], Ramsar	Favourable maintained: June 2015	Breeding population of international importance: 1,860 pairs (16.9% of Baltic/UK/Ireland population).
Golden eagle breeding	SPA	Favourable maintained: August 2016	Breeding population of national importance: 5 pairs (1.3% of UK population).
Golden plover breeding	SPA, SSSI[ab]	Favourable recovered: June 2015	Breeding population of national importance: 1,064 pairs (4.7% UK population).

[7] Whilst the Grudie Peatlands SSSI and Dunbeath Peatlands SSSI also underpin the Caithness and Sutherland Peatlands SPA, they are over 20km from the Proposed Development and so has not been included.

[8] Whilst the Dornoch Firth SSSI also underpins the Dornoch Firth and Loch Fleet SPA, it is over 20km from the Proposed Development and so has not been included.

Feature	Qualifying Feature Category	Condition	Description
Greenshank breeding	SPA, SSSI[b]	Favourable maintained: June 2015	Breeding population of national importance: 256 pairs (0.4% Europe/Western Africa population).
Hen harrier breeding	SPA	Favourable maintained: June 2016	Breeding population of national importance: 14 pairs (2.8% of UK population).
Merlin breeding	SPA	Favourable maintained: July 2004	Breeding population of national importance: 54 pairs (4.2% of UK population).
Red-throated diver breeding	SPA	Favourable maintained: July 2006	Breeding population of national importance: 89 pairs (9.5% of UK population).
Short-eared owl breeding	SPA	Not assessed	Breeding population of national importance: 30 pairs (3% of UK population).
Wigeon breeding	SPA	Not assessed	Breeding population of national importance: 43 pairs (<0.1% of Western Siberia/North-western/North-eastern Europe population).
Wood sandpiper breeding	SPA	Favourable maintained: June 2004	Breeding population of national importance: 5 pairs (50% of UK population).
Greylag goose breeding	Ramsar	Favourable maintained: June 2018	Breeding population of international importance
Breeding bird assemblage	SSSI[b], Ramsar	Favourable maintained: July 2009	Across the SSSIs and Ramsar the following species are listed in the breeding bird assemblages that are not individually qualifying features: teal, curlew, arctic skua, scaup, wigeon, red grouse, raven, snipe, curlew, buzzard, common sandpiper and dipper.

Table 8.2 – Qualifying features of Lairg and Strath Brora Lochs SPA (and underpinning Lairg and Strath Brora Lochs SSSI)

Feature	Qualifying Feature Category	Condition	Description
Black-throated diver breeding	SPA, SSSI	Favourable maintained: June 2008	Breeding population of European importance: 6 pairs (3.8% of UK population).

Table 8.3 – Qalifying features of East Caithness Cliffs SPA (and underpinning Berriedale Cliffs SSSI)

Feature	Qualifying Feature Category	Condition	Description
Cormorant breeding	SPA	Unfavourable declining: June 2015	Breeding population of national importance: 230 pairs (3% of UK population).

Feature	Qualifying Feature Category	Condition	Description
Fulmar breeding	SPA, SSSI	Favourable maintained: June 2015	Breeding population of national importance: 15,000 pairs (3% of UK population).
Great black-backed gull breeding	SPA	Unfavourable no change: June 2015	Breeding population of national importance: 800 pairs (4% of UK population).
Guillemot breeding	SPA, SSSI	Favourable maintained: June 2015	Breeding population of European and national importance: 106,700 individuals 3.1% of north Atlantic biogeographic population, 10% of UK).
Herring gull breeding	SPA	Unfavourable no change: June 2015	Breeding population of European and national importance: 9,400 pairs (1% of north west European biogeographic population, 6% of UK population).
Kittiwake breeding	SPA, SSSI	Favourable maintained: July 1999	Breeding population of European and national importance: 32,500 pairs (1% of north Atlantic biogeographic population, 7% of UK population).
Peregrine falcon breeding	SPA	Favourable maintained: June 2014	Breeding population of European importance: 6 pairs (0.5% of UK population).
Razorbill breeding	SPA, SSSI	Favourable maintained: June 2015	Breeding population of European and national importance: 15,800 individuals (1.8% of total A. t. islandica biogeographic population, 11% of UK population).
Shag breeding	SPA, SSSI	Unfavourable no change: June 2015	Breeding population of European and national importance: 2,300 pairs (1.8% of north European biogeographic population, 6% of UK population).
Seabird assemblage breeding	SPA, SSSI	Favourable maintained: June 2015	Regularly supports in excess of 20,000 individual seabirds: regularly supports 300,000 individual seabirds.

Table 8.4 – Qualifying features of Dornoch Firth and Loch Fleet SPA (and underpinning Loch Fleet SSSI[c] and Mound Alderwoods SSSI[d] and Dornoch Firth and Loch Fleet Ramsar)

Feature	Qualifying Feature Category	Condition	Description
Bar-tailed godwit non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Wintering population of national importance: 1998/9 – 2002/3 winter peak mean of 1,092 individuals (1.7% of UK population).
Curlew non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Wintering population of national importance.
Dunlin non-breeding	SPA, Ramsar	Favourable declining: January 2015	No further information given.
Greylag goose non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Wintering population of international importance: 1996/7 – 2000/01 winter peak mean of 2,677 individuals (2.6% of Iceland/UK/Ireland population).
Osprey breeding	SPA, Ramsar	Favourable maintained: June 2017	Foraging grounds for a breeding population of European importance: 13 pairs (10.2% UK population).

Feature	Qualifying Feature Category	Condition	Description
Oystercatcher non-breeding	SPA, Ramsar	Favourable maintained: January 2015	No further information given.
Redshank non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Wintering population of national importance: 1998/9 – 2002/03 winter peak mean of 1,265 individuals (1% UK population).
Scaup non-breeding	SPA, Ramsar	Not assessed	No further information given.
Teal non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Wintering population of national importance: 1998/9 – 2002/03 winter peak mean of 2,175 individuals (1.1% UK population).
Wigeon non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Wintering population of international importance: 1998/09 – 2002/03 winter peak mean of 14,200 individuals (3.4% of the UK population).
Waterfowl assemblage non-breeding	SPA, Ramsar	Favourable maintained: January 2015	Winter peak mean (1989/90 – 1993/94) of 34,500 waterfowl, comprising of 22,000 wildfowl and 12,500 waders. This includes wintering populations of national importance of scaup and redshank.
Eider non-breeding	SSSI[c]	Favourable recovered: November 2013	Wintering population of national importance: 1% of UK population
Breeding bird assemblage	SSSI[c]	Favourable declining: July 2008	Species breeding on foreshore, dune and saltmarsh habitats: ringed plover, oystercatcher, shelduck, eider, arctic tern, common tern and little tern. Species breeding in pine woodland habitat: osprey, Scottish crossbill, treecreeper and great spotted woodpecker.
Breeding bird assemblage	SSSI[d]	Favourable maintained: May 2004	Red-breasted merganser, teal, water rail, snipe, redshank, grasshopper warbler, cuckoo, sedge warbler and shelduck all breed within the SSSI.

Table 8.5 – Qualifying features of Strath Carnaig and Strath Fleet Moors SPA (and underpinning Strath Carnaig and Strath Fleet Moors SSSI)

Feature	Qualifying Feature Category	Condition	Description
Hen harrier breeding	SPA, SSSI	Favourable declining: July 2013	Breeding population of European importance: mean of 12 breeding pairs between 2002 and 2004 (approximately 2.5% of UK population of 483 pairs).

8.4.2 **Table 8.6** details the relevant species listed on the five SPAs within 20km of the site in relation to recommended connectivity distances (SNH 2016) – the likelihood of true connectivity for any species indicated to have 'potential connectivity' (based only on connectivity distances supplied by SNH 2016) in **Table 8.6** is then considered in paragraphs 8.4.4 to 8.4.6. For the East Caithness Cliffs SPA, only peregrine falcon has been included in **Table 8.6** as all the other species for which the SPA is designated (**Table 8.3**) are considered to be true seabirds and as such the site is at best, of limited importance to these species (in

addition, the site is located inland from the SPA and would not be located within any flyways for these species between the SPA and their offshore feeding areas). For Dornoch Firth and Loch Fleet SPA, only greylag goose and osprey are included in **Table 8.6** as all the other species for which the SPA is designated (**Table 8.4**) are wintering populations of waders and waterfowl and as such the site is at best, of limited importance to these species.

8.4.3 Forging ranges are not provided in SNH (2016) for common scoter, breeding greylag goose, wigeon or wood sandpiper and so approximate foraging ranges have been supplied on the basis of comparative species[9] for which foraging ranges are detailed in the SNH (2016) connectivity guidance.

Table 8.6 – SPA Qualifying Species and Connectivity Likelihood to the Proposed Development (SNH 2016)

SPA Species	SNH (2016) Foraging Range	Caithness and Sutherland Peatlands SPA – 4.4km	Lairg and Strath Brora Lochs SPA – 11.5km	East Caithness Cliffs SPA – 13.6km	Dornoch Firth and Loch Fleet SPA – 14.8km	Strath Carnaig and Strath Fleet Moors SPA – 18.5km
Black-throated diver	10km	Potential connectivity	No connectivity	-	-	-
Common scoter	1km	No connectivity	-	-	-	-
Dunlin	500m	No connectivity	-	-	-	-
Golden eagle	6km	Potential connectivity	-	-	-	-
Golden plover	3km	No connectivity	-	-	-	-
Greenshank	2km	No connectivity	-	-	-	-
Greylag goose (breeding)	15-20km	Potential connectivity	-	-	-	-
Greylag goose (non-breeding)	15-20km	-	-	-	Potential connectivity	-
Hen harrier	2km	No connectivity	-	-	-	No connectivity
Merlin	5km	Potential connectivity	-	-	-	-
Osprey	10km	-	-	-	No connectivity	-
Peregrine falcon	2km	-	-	No connectivity	-	-
Red-throated diver	8km	Potential connectivity	-	-	-	-
Short-eared owl	2km	No connectivity	-	-	-	-

[9] Comparative species are: breeding greylag goose = wintering greylag goose, wood sandpiper = dunlin, common scoter = curlew, and wigeon = red-throated diver

SPA Species	SNH (2016) Foraging Range	Caithness and Sutherland Peatlands SPA – 4.4km	Lairg and Strath Brora Lochs SPA – 11.5km	East Caithness Cliffs SPA – 13.6km	Dornoch Firth and Loch Fleet SPA – 14.8km	Strath Carnaig and Strath Fleet Moors SPA – 18.5km
Wigeon	8km	Potential connectivity	-	-	-	-
Wood sandpiper	500m	No connectivity	-	-	-	-

8.4.4 Considering the information detailed in **Table 8.6** and paragraph 8.4.2, there is considered to be no potential for connectivity between the Proposed Development and the Lairg and Strath Brora Lochs SPA, East Caithness Cliffs SPA or Strath Carnaig and Strath Fleet Moors SPA. Furthermore, whilst the Dornoch Firth and Loch Fleet SPA and Caithness and Sutherland Peatlands SPA is within the foraging range for wintering/breeding greylag goose (15-20km, SNH 2016), considering the upland habitats present within the site (and lack of waterbodies), the site is, at best, of limited importance to foraging greylag goose and consequently there is considered to be no connectivity between the Proposed Development and the greylag goose populations included on the Dornoch Firth and Loch Fleet SPA and the Caithness and Sutherland Peatlands SPA.

8.4.5 Of the remaining species listed on the Caithness and Sutherland Peatlands SPA (**Table 8.1**) and based on the connectivity distances provided by SNH (2016), there is only considered to be potential for connectivity between the Proposed Development and black-throated diver, red-throated diver, wigeon, merlin and golden eagle (**Table 8.6**). When considering the upland habitats present within the site (and lack of waterbodies), the site is not considered to be suitable for nesting or foraging black-throated diver, red-throated diver or wigeon (in addition, the site is not located between the various parts of the SPA and is therefore unlikely to be within any regular flightpaths used by these species) and consequently there is considered to be no connectivity between the Proposed Development and the Caithness and Sutherland Peatlands SPA for these species. There is however, considered to be some potential for connectivity between the Proposed Development and the golden eagle and merlin populations included on the Caithness and Sutherland Peatlands SPA.

8.4.6 In conclusion, only potential effects relating to golden eagle and merlin will be considered in the context of both the regional (NHZ) and Caithness and Sutherland Peatlands SPA populations. Any other species listed on any of the SPAs (and associated SSSIs and Ramsars) that are recorded during the baseline surveys will only be considered in the context of their regional (NHZ) populations.

Field Surveys

8.4.7 The following surveys have been undertaken to date (or will be undertaken by the end of August 2019) for the Proposed Development. The surveys have been undertaken in line with the appropriate guidance (section 8.2.5) and survey areas[2] are detailed below.

- Flight activity (Vantage Point, VP) surveys – four VP locations (**Figure 8.2**), October 2015 to October 2016 and September 2018 to August 2019 (two breeding seasons and two non-breeding seasons). It is acknowledged that the draft scoping layout contains five turbines that are outwith the current viewshed areas (T18, T19, T20, T21

and T22) and should any turbines remain outwith the viewshed areas in the final design, this will be accounted for in the collision modelling.

- Scarce breeding bird[4] surveys, 2km survey area – February to August 2016, February to August 2019.
- Black grouse surveys, 1.5km survey area – April 2016.
- Upland breeding bird surveys, 500m survey area – April to July 2016 and April to July 2019.
- Winter walkover surveys, 500m survey area – November and December 2015, February 2016, November and December 2018 and January and February 2019.

Ornithological Activity

8.4.8 Field surveys have revealed an assemblage of species typical of upland areas in central Scotland.

8.4.9 As of mid-March 2019, 11 Annex 1[6] and/or Schedule 1[10] species have been recorded: golden eagle, golden plover, goshawk, greylag goose, hen harrier, merlin, osprey, peregrine falcon, short-eared owl, white-tailed eagle and whooper swan. Of these species, a golden eagle territory has been identified within the site and hen harrier were recorded breeding outside the 2km survey area.

8.4.10 In addition, three Red listed Birds of Conservation Concern (BoCC, Eaton *et al.* 2015) commonly considered as target species (SNH 2016) have been recorded: curlew, lapwing and herring gull.

8.4.11 Golden eagle was the most frequently recorded raptor and are occuping a territory within the site. As of mid-March 2019, three eyries have been identified within the site, however breeding success is unconfirmed and it is uncertain whether the pair have successfully even laid either summer of surveys (2016 and 2019). A hen harrier territory was located during the 2016 breeding season; however, it was approximately 2.2km east of the site and breeding success at the hen harrier nest is therefore unknown. Goshawk, merlin, osprey, peregrine falcon, short-eared owl and white-tailed eagle were all infrequently recorded within the 2km survey area, with no evidence of breeding.

8.4.12 As of March 2019, flight activity surveys have recorded eight target species, collectively accounting for 128 flightlines (Table 8.7), of which 112 flightlines were recorded at Potential Collision Height (PCH) and may therefore be included in any collision risk modelling, depending on their location in relation to the final turbine layout and the turbine dimensions selected. The bird seconds are calculated for each observation as the product of flight duration and number of individuals. This is then summed per species to give the total bird seconds recorded across the entire surveyed period.

[10] Wildlife & Countryside Act 1981 (as amended).

Table 8.7 – Summary of target species recorded during flight activity surveys, October 2015 to mid-March 2019

Feature	Total Number of Flightlines Recorded	Total Number of Birds Recorded	Total Bird Seconds	Total Flight Seconds at PCH
Golden eagle	78	93	20,112	20,071
Golden plover	25	129	4,859	3,545
Greylag goose	4	186	15,883	14,983
Hen harrier	2	2	149	99
Merlin	9	11	816	756
Peregrine falcon	7	7	688	643
Short-eared owl	2	2	77	45
Whooper swan	1	6	588	588

8.4.13 An initial survey for black grouse during April 2016 did not record any black grouse within the survey area and the habitat was considered to be unsuitable for black grouse.

8.4.14 Upland breeding wader surveys recorded three target wader species (curlew, golden plover and lapwing) and three secondary wader species (dunlin, oystercatcher and snipe) of which golden plover was the only target wader identified to be breeding within the 500m survey area: territory analysis identified 13 to 18 golden plover territories within the 500m survey area.

Key Sensitivities

8.4.15 On the basis of the surveys undertaken at the site to date, golden eagle and golden plover are most likely to be considered in the EIA Report as IOFs. Additional target species may be included depending on collision modelling results (which will be undertaken post design freeze).

8.4.16 In addition, there is potential for connectivity to exist between the site and Caithness and Sutherland Peatlands SPA for golden eagle and merlin (paragraph 8.4.5) and consequently the effects detailed below will also be considered in the context of the HRA process.

8.4.17 Cumulative (and in the context of the HRA process, in-combination) effects will also be considered where relevant for all of the effects detailed below.

8.5 Potential Effects

Construction Impacts and Effects

8.5.1 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, including loss of nesting habitat for target species (breeding raptors and waders); and
- disturbance to target species (breeding raptors and waders) associated with construction/decommissioning activities.

Operational Impacts and Effects

8.5.2 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 (raptors and waders) around operational turbines; and
- potential collision risks associated with operational turbines for target species (most likely to be raptors and golden plover).

8.6 Potential Mitigation

8.6.1 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.

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

8.6.3 Standard good practice (SNH 2019) measures will be applied to minimise any potential effects on 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):

- checks for breeding raptors and golden plover 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.

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

8.7 Questions

8.7.1 **Q8.1: confirmation that there is no connectivity between the site and any designated site, with the <u>exception</u> of the Caithness and Sutherland Peatlands SPA.**

- **Refer to paragraphs 8.4.2 to 8.4.6.**

8.7.2 **Q8.2: do consultees agree that the range of surveys (October 2015 to October 2016 and September 2018 to August 2019) are sufficient and appropriate?**

- **Refer to paragraph 8.4.7.**

8.7.3 **Q8.3: are there any other relevant consultees who should be contacted, or other information sources referenced, with respect to the ornithology assessment?**

- **Refer to paragraph 8.3.2.**

8.7.4 **Q8.4: confirmation of the approach to the ornithological assessment is requested. Do consultees believe that there are further species which need to be considered in the assessment?**

8.7.5 **Q8.5: confirmation that the low conservation value species can be scoped out of the assessment is requested.**

- **Refer to paragraph 8.3.16.**

8.7.6 **Q8.6: do consultees agree that the proposed mitigation is sufficient and appropriate?**

- **Refer to paragraphs 8.6.1 to 8.6.4.**

9 Geology, Hydrology and Hydrogeology

9.1 Introduction

9.1.1 This chapter describes the baseline conditions at the site and outlines the potential effects of the Proposed Development on geology, hydrology and hydrogeology. Proposed surveys and assessment methodologies are outlined to develop mitigation measures to prevent or reduce identified potential effects.

9.2 Legislation, Policy and Guidance

Geology, Peat and Soils

- SEPA Regulatory Position Statement - Developments on Peat (Scottish Environment Protection Agency, 2012).
- Good Practice during Windfarm Construction, Version 3, (Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland & Historic Environment Scotland, September 2015).
- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, January 2017).
- Developments on Peatland - Guidance on the assessment of peat volumes, re-use of excavated peat and the minimisation of waste (Scottish Renewables & SEPA, 2012).
- Floating Roads on Peat - Report into Good Practice in Design, Construction and Use of Floating Roads on Peat with particular reference to Wind Farm Developments in Scotland (Forestry Commission Scotland (FCS) & Scottish Natural Heritage (SNH), 2010).
- Managing Geotechnical Risk: Improving Productivity in UK Building and Construction (Institution of Civil Engineers, 2001).
- Ground Engineering Spoil: Good Management Practice CIRIA Report 179 (CIRIA, 1997).
- Scottish Roads Network Landslides Study Summary Report (Scottish Executive, 2005).
- Guidelines for the Risk Management of Peat Slips on the Construction of Low Volume/Low Cost Roads on Peat (Forestry Commission, 2006).

Hydrology and Hydrogeology

- EC Water Framework Directive (2000/60/EC).

- Scottish Planning Policy (SPP) (Scottish Executive, June 2014).
- Water Environment and Water Services (Scotland) Act 2003.
- Water Environment (Controlled Activities) Regulations 2011.
- Forests and Water Guidelines (Forestry Commission, 2012).
- Land Use Planning System – SEPA Guidance Note 31 (Guidance on Assessing Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems), Version 3, (SEPA, 11/09/2017).
- Control of Water Pollution from Linear Construction Projects – Technical Guidance, C648 (CIRIA, 2006).
- Good Practice during Windfarm Construction, Version 3 (Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland & Historic Environment Scotland, September 2015).
- The SuDS Manual C753 (CIRIA, 2015).
- Environmental Good Practice on Site C692 (CIRIA, 2010).

9.3 Proposed Scope of Assessment

9.3.1 The potential effects from the Proposed Development on ground conditions and the water environment will be assessed by completing a desk study and field investigation followed by an impact assessment, the processes of which are detailed below.

Method of Assessment and Reporting

9.3.2 An initial desk study will be undertaken to determine and confirm the baseline characteristics by reviewing available information relating to soils, geology, hydrology, and hydrogeology such as groundwater resources, licensed and unlicensed groundwater and surface water abstractions, public and private water supplies, surface water flows, flooding, rainfall data, water quality and soil data. This will include review of published geological maps, OS maps, aerial photographs and site-specific data such as site investigation data, geological and hydrogeological reports, digital terrain models (slope plans) and geological literature.

Desk Study

9.3.3 The desk study will identify sensitive features which may potentially be affected by the Proposed Development and will confirm the geological, hydrogeological and hydrological environment.

Field Surveys

9.3.4 The hydrological assessment specialists will liaise closely with the project ecology and geology / geotechnical specialists to ensure that appropriate information is gathered to allow a comprehensive impact assessment to be completed.

9.3.5 A detailed site visit and walkover survey will be undertaken, to:

- verify the information collected during the desk and baseline study;

- undertake a visual assessment of the main surface waters and identify private water supplies;
- identify drainage patterns, areas vulnerable to erosion or sediment deposition, and any pollution risks;
- visit any identified GWDTEs (in consultation with the project ecologists);
- prepare a schedule of potential watercourse crossings;
- inspect rock exposures, establish by probing an estimate overburden thicknesses (a probe is pushed vertically into the ground to refusal and the depth is recorded);
- confirm underlying substrate, based on the type of refusal of the probe (e.g. solid and abrupt refusal-rock, solid but less abrupt refusal with grinding or crunching sound-sand or gravel, rapid and firm refusal-clay, gradual refusal-dense peat or soft clay);
- allow appreciation of the site, determining gradients, possible borrow pits, access routes, ground conditions, etc., and to assess the relative location of all the components of the Proposed Development;
- complete a probing exercise that will identify areas of thick peat that may constrain the Proposed Development (by inserting a probe into the ground and pushing into the peat to refusal then the depth is recorded); and
- confirm the distribution and depth of peat across areas of the site being considered for development.

9.3.6 The desk study and field surveys will be used to identify potential development constraints and be used as part of the site design.

9.3.7 Once the desk study is completed and sensitive soil, geological and water features identified an impact assessment will be undertaken to assess the potential effects on soils, geology and the water environment as a result of the construction, operation and restoration/decommissioning of the Proposed Development.

Assessment of Effects

9.3.8 The purpose of this assessment will be to:

- identify any areas susceptible to peat slide, using peat thickness and DTM data to analyse slopes;
- assist in the micrositing of turbines and tracks in areas of no peat or shallow peat;
- assess potential effects on soils, peat and geology;
- determine what the likely effects of the Proposed Development are on the hydrological regime, including water quality, flow and drainage;
- allow an assessment of potential effects on identified licensed and private water supplies;
- assess potential effects on water (including groundwater) dependent habitats;

- determine suitable mitigation measures to prevent significant hydrological and hydrogeological effects;
- assist in the micrositing of turbines in the least hydrogeologically and hydrologically sensitive areas by applying buffer zones around watercourses and other hydrological features; and
- develop an acceptable code for working on the site that will adopt best practice procedures, effective management and control of onsite activities to reduce or offset any detrimental effects on the geological, hydrogeological and hydrological environment.

9.3.9 A qualitative risk assessment methodology will be used to assess the significance of the potential effects. Two factors will be considered: the sensitivity of the receiving environment and the potential magnitude should that potential impact occur.

9.3.10 This approach provides a mechanism for identifying the areas where mitigation measures are required, and for identifying mitigation measures appropriate to the risk presented by the Proposed Development. This approach also allows effort to be focused on reducing risk where the greatest benefit may result.

9.3.11 The sensitivity of the receiving environment (i.e. the baseline quality of the receiving environment as well as its ability to absorb the effect without perceptible change) and the magnitude of impacts will each be considered through a set of pre-defined criteria.

9.3.12 The sensitivity of the receiving environment together with the magnitude of the effect defines the significance of the effect, which will be categorised into level of significance.

Peat Slope Risk Qualitative Risk Assessment

9.3.13 Peat probing will be completed as part of an initial low resolution 'first pass' survey:

- peat depths within the development area will be obtained using a 100m grid where access is possible (the probing will also provide information of the substrate below the peat);
- a limited (in terms of aerial extent) geomorphological mapping exercise will be undertaken to link the topographic features with the underlying geology and to visit those areas of the site that may be identified as potentially 'at risk from peat slide';
- the thickness of the peat will be established by probing and the underlying sub-strata confirmed by inspection of watercourses;
- the investigation will look at proposed turbine and infrastructure locations for signs of existing or potential peat instability; and
- output from the field survey will comprise a record of investigation locations and summary of peat depths recorded.

9.3.14 If significant peat deposits are proven a preliminary Peat Landslide Hazard and Risk Assessment will be completed using the site survey data and slope analysis (using DTM data), highlighting areas that may be impacted by a peat slide so that appropriate mitigation measures and can be identified.

Consultation

9.3.15 As part of the consultation phase of the project environmental data and views of the Proposed Development will be sought from:

- Ironside Farrar Ltd (Advisors to the Scottish Government with regard to Peat);
- SEPA;
- Scottish Natural Heritage (SNH); and
- The Highland Council.

Matters Scoped Out

9.3.16 At this stage, it is proposed that the following can be scoped out of detailed assessment:

- Detailed Flood Risk Assessment. Published mapping confirms that most of the site is not located in an area identified as being at flood risk. It is proposed, therefore, that a simple screening of potential flooding sources (fluvial, coastal, groundwater, infrastructure etc.) is presented in the EIA Report and measures that would be used to control the rate and quality of runoff will be specified in the EIA Report.

9.4 Baseline Conditions

9.4.1 The site is shown by British Geological Survey (BGS) to be underlain by peat, glacial till and alluvium. Beneath the superficial deposits, bedrock across most of the site comprises Devonian age sedimentary rocks of the Berriedale Sandstone Formation and Neoproterozoic age metasedimentary rocks of the Kildonan Psammite Formation and Kintradwell Boulder Beds.

9.4.2 Areas of peat underlying the site have been classified as 'Class 1' – a priority peatland habitat.

9.4.3 Published mapping confirms there is no underground or surface opencast mining. Except for small borrow pits used for track construction there are no mining or quarrying activities present on site.

9.4.4 The bedrock deposits are classified as low and moderately productive aquifers which would be expected to contain small amounts of groundwater locally. Where present, groundwater may flow in the near surface weathered zone and in secondary fractures.

9.4.5 The SEPA River Basin Management Plan (http://gis.sepa.org.uk/rbmp/) shows the site does not lie within a Drinking Water Protection Zone.

9.4.6 The Stetdale Burn, Kintradwell Burn, Badenhauglish Burn and Loth Burn and their tributaries flow eastward through or near to the site before discharging to the North Sea.

9.4.7 SEPA mapping confirms flood extents associated with the larger watercourses are confined to the watercourse corridors, and floodplain extents are not extensive.

9.4.8 Three Sites of Special Scientific Interest (SSSI) are recorded near or downstream of the site:

- Helmsdale Coast, located immediately south, downstream of the site boundary. Helmsdale Coast SSSI comprises coastal geological features;
- Ballinreach Coastal Gorges located downstream on the south of the site, within the site boundary. Ballinreach Coastal Gorges SSSI is a birch woodland; and

- Loth Gorge located downstream, on the south eastern edge of the site boundary. Loth Gorge SSSI is a birch woodland.

9.5 Potential Effects

9.5.1 A summary of the potential effects on ground conditions and the water environment resulting from construction, operation and decommissioning of a wind farm is provided below. These will be considered in the EIA Report.

Potential Construction Impacts and Effects

- disturbance and loss of deposits of peat;
- disturbance of any residual ground contamination which might be associated with historic land use (such as forestry);
- ground instability (inc. peat slide risk);
- impacts on surface water and groundwater quality from pollution from fuel, oil, concrete or other hazardous substances;
- discharge of sediment-laden runoff to drainage system and watercourses;
- increased flood risk to areas downstream of the site during construction through increased surface run-off;
- changes in groundwater levels from dewatering excavations;
- potential change of groundwater flow paths and contribution to areas of peat and groundwater dependent terrestrial ecosystems (GWDTEs);
- disturbance of watercourse bed and banks from the construction of culverts;
- potential pollution impacts to public and private water supplies; and
- potential blockage of existing forestry drainage channels or culverts during forestry clearance or construction activities.

Potential Operational Impacts and Effects

- increased runoff rates and flood risks, resulting from increases in areas of tracks and hardstanding at turbines;
- changes in natural surface water drainage patterns (which may affect water contribution to areas of peat and GWDTE);
- changes to groundwater levels and groundwater movement;
- longer term impacts on abstraction for water supplies, particularly any supplies dependent on groundwater; and
- pollution impacts on surface water quality from maintenance work.

Potential Decommissioning Impacts and Effects

- Are considered to be similar to potential construction impacts and effects and thus the same potential effects will be considered for the decommissioning phase of the development.

9.6 Potential Mitigation

9.6.1 The Proposed Development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies so as to avoid and/or minimise potential effects on receptors where possible. This will include geological and hydrological and hydrogeological constraints which include slope stability, deep peat, watercourse locations, areas of potential flooding, private water supplies and groundwater dependent terrestrial ecosystems.

9.6.2 For example, it is expected that the following potential mitigation measures will be included in the design of the Proposed Development:

- a 50m buffer will be applied to watercourses;
- site specific peat probing will be used to identify areas of potential deep peat and these will be avoided;
- a site specific peat landslide and hazard risk assessment will be prepared and areas of potential increased peat slide risk will be avoided; and
- private water supply sources and areas of GWDTE will be avoided.

9.6.3 There is much best practice guidance (see Section 9.2) which has been developed to assist developers minimise the risks associated with wind farm construction and this will be used to develop site specific mitigation measures. Measures will be proposed to control and mitigate, for example, pollution risk (from anthropogenic and geogenic sources), flood risk, watercourse crossings, impacts on surface and groundwater flow paths, and management of peat soils.

9.6.4 Mitigation measures will be specified for all stages of the site life (construction, operation and decommissioning).

9.7 Questions

9.7.1 **Do you agree that it is appropriate to scope out a detailed flood risk assessment?**

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

10 Transport and Access

10.1 Introduction

10.1.1 The Transport and Access Assessment will be conducted by transport consultant, WYG Environment Planning Transport Limited, part of the WYG Group. All staff contributing to the assessment will have undergraduate and/or postgraduate degrees in relevant subjects, have professional transport assessment experience, and hold professional membership of the Chartered Institute of Logistics and Transport. All reporting will be reviewed and approved by Liz Hunter of WYG. A detailed numerical assessment of effects will be

undertaken for the construction phase only as the main transport impacts will be associated with the movement of Heavy Goods Vehicles (HGV) travelling to and from the site during the construction phase of the project.

10.1.2 The Transport and Access Chapter will be supported by a Technical Appendix: Transport Assessment, which would be a standalone document including detailed background information, calculations, drawings and framework traffic management plans.

10.2 Legislation, Policy and Guidance

10.2.1 A full review of the relevant transport planning policies, guidance notes and documentation will be undertaken and will include reference to the following:

- National Planning Framework (NPF, 2014);
- Scottish Planning Policy (SPP, 2014);
- Planning Advice Note (PAN) 75(Scottish Government, 2005);
- Transport Assessment Guidance (Transport Scotland, 2012);
- Guidelines for the Environmental Assessment of Road Traffic, (IEMA, 1993);
- Design Manual for Roads and Bridges, Volume II Environmental Assessment, Section 2 Environmental Assessment (Highways Agency, 2008);
- The Highland-wide Local Development Plan (HwLDP) (THC, 2012); and
- The Highland Council's Local Transport Strategy (THC, 2010).

10.2.2 Chapter 4 of this Scoping Report sets out the planning policy framework that is considered of relevance to undertaking the EIA Report for the Proposed Development. The transport and access assessment will, among other things, reference those topic specific policies or advice notes of relevance to this technical discipline of the EIA Report.

10.3 Proposed Scope of Assessment

10.3.1 The assessment will consider the potential for likely significant effects on receptors using transport routes resulting from increased vehicle movements associated with the construction, operational and decommissioning phases of the Proposed Development.

10.3.2 The construction phase will generate the greatest volume of traffic. The numerical assessments will therefore focus on this phase of development though consideration will be given to both the operational and decommissioning phases.

10.3.3 Receptors are the users of the roads within the transport and traffic study area and the locations through which those roads pass.

10.3.4 The assessment will involve desk study, site visits, consultation, data processing and analysis and interpretation using swept path assessment software, and professional judgement. It will involve the following key stages:

- identify study area;
- determine baselines;
- review the Proposed Development to identify potential effects;

- evaluate significance;
- identify mitigation; and
- assess residual effects.

10.3.5 The IEMA Guidelines document includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement will be used to develop a classification of sensitivity for users based on the characteristics of roads and locations as shown in the table below (Table 10.1).

Table 10.1 Sensitivity of Users

Receptor	Sensitivity			
	Negligible	**Low**	**Medium**	**High**
Users of Roads	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads.	Where the road is Trunk or A-class, constructed to accommodate general and HGV traffic moving between primary destinations. Includes roads with little or no traffic calming or traffic management measures.	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.
Users of Locations	Where a location includes individual dwellings or scattered settlements with no facilities.	Where a location is a small rural settlement, few community or public facilities or services.	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Where a location is a large rural settlement containing a high number of community and public services and facilities.

10.3.6 The following rules, also taken from the IEMA Guidelines, will be used to determine which links within the transport and traffic study area should be fully assessed:

- Rule 1 - include road links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30 %).
- Rule 2 - include any other specifically sensitive areas where traffic flows are predicted to increase by 10 % or more.

10.3.7 The IEMA Guidelines identify the key effects that are most important when assessing the magnitude of traffic impacts from an individual development and the levels of magnitude, these being:

- Severance - changes in traffic movements of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' [or minor, moderate and major] changes in severance respectively;
- Driver delay – the likelihood of delays is only considered to be "significant [or major] when the traffic on the network surrounding the development is already at, or close to, the capacity of the system;
- Pedestrian delay - an increase in total traffic of approximately 30% can double the delay experienced by pedestrians attempting to cross a road and would be considered 'substantial' [major];
- Pedestrian amenity - a change in the traffic flow of -50% or +100% would produce a 'substantial' [major] change in pedestrian amenity;
- Fear and intimidation - changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' [or minor, moderate and major] changes in severance respectively; and
- Accidents and safety - professional judgement is used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents.

10.3.8 To determine the overall significance of the transport and traffic effects, the results from the receptor sensitivity and effects magnitude assessment will be correlated and classified based on a scale set out in Table 2.4 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) and summarised in the table below (Table 10.2).

Table 10.2 Significance of Effects

Receptor Sensitivity	Magnitude of Change				
	Substantial	**Moderate**	**Slight**	**Negligible**	**None**
High	major	major/ moderate	moderate / minor	minor	none
Medium	major/ moderate	moderate	minor	minor / negligible	none
Low	moderate / minor	minor	minor	minor / negligible	none
Negligible	minor	minor	minor / negligible	negligible	none

10.3.9 In terms of the EIA Regulations, effects would be considered significant where they are assessed to be major, major/moderate or moderate.

10.3.10 The chapter will also assess the potential for significant cumulative effects arising from the addition of the Proposed Development to other cumulative developments, which are the subject of a valid planning application. Operational, under construction and consented developments will be considered as part of the baseline. Traffic flows associated with developments close to the end of their operational life will be captured in existing traffic movement data and therefore form part of the baseline.

10.4 Baseline Conditions

10.4.1 The traffic and transport study area is defined as the lengths of public road that would be used to access the Proposed Development and be most impacted during the construction phase. The study area has been identified through a review of the likely routes between suppliers of equipment and materials and the site and it is considered that it should include:

- A9 between Kintradwell and Helmsdale; and
- A9 between Kintradwell and Invergordon.

10.4.2 Existing daily traffic flows within the study area will be established using data sourced from the Department for Transport (DfT) online database of traffic surveys and new traffic surveys (count and speed) undertaken by Automatic Traffic Counter (ATC). It is proposed that the following data is collected:

- Traffic Count - Department for Transport Count site 30721 – A9 at Culgower;
- Traffic Count - Department for Transport Count site 40791 – A9 at south of Brora;
- Traffic Count - Department for Transport Count site 80003 – A9 north of A949;
- Traffic Count - Department for Transport Count site 80001 – A9 south of Meikle Ferry Roundabout;
- Traffic Count - Department for Transport Count site 20724 – A9 at Invergordon; and
- Traffic Count - 7-day automatic traffic count and speed survey in vicinity of proposed site access junction.

10.4.3 Road traffic accident data will be obtained from the online resource CrashMap.co.uk for the study area roads covering the five years to the end of 2018.

10.4.4 The presence, or otherwise, of walking and cycling routes within the study area and the site, that may be impacted by the Proposed Development will be established through desktop review.

10.4.5 A full route assessment will be undertaken on the proposed access route for the delivery of turbine components to the site to determine its suitability for the movement of abnormal loads, to identify any constraint points where mitigation may be required and to determine the required mitigation. The route assessment will commence at the Port of Invergordon, the anticipated Port of Entry, and continue to the proposed site entrance off the A9 north of Brora.

10.4.6 Base year daily traffic flows for the year construction is anticipated to commence will be estimated by applying the National Road Traffic Forecast (NRTF) high growth factors to existing traffic flows. Applying high growth factors provides a robust assessment as they represent higher than average growth.

10.5 Potential Effects

Construction Impacts and effects

10.5.1 During the construction period, the following traffic will require access to the site:

- Staff transport, either cars or staff minibuses;

- Construction equipment and materials, deliveries of machinery and supplies such as cement; and
- Abnormal loads consisting of the wind turbine sections and heavy lift cranes.

10.5.2 Estimates will be made of the total traffic movements associated with each element of the construction programme and these will be split into average monthly deliveries according to the construction phasing plan. Estimates will be based on information provided by the Applicant and experience developed from other wind farm projects of a similar scale.

10.5.3 To enable comparison of the estimated base traffic flows with total volumes including predicted construction traffic, the monthly construction flows will be converted to average daily flows for each month of the construction period. The peak daily construction traffic flows will be added to the daily base flows and the percentage uplift in this total traffic against base traffic calculated.

10.5.4 An assessment of percentage uplift on each road link within the study area will be made with reference to Rule 1 and 2 of the IEMA Guidelines. Where required, links will be taken forward to an assessment of the predicted magnitude of the impact from the increase in traffic movements with no mitigation in place. The significance of the effect will then be assessed.

10.5.5 For any effects that are found to be significant with no mitigation in place, an evaluation will be undertaken to consider the residual effects after the implementation of the proposed mitigation.

Operational Impacts and Effects

10.5.6 It is likely that during the operation of the site there would be up to two vehicle movements per week for maintenance purposes. Also, there could be occasional abnormal load movements to deliver replacement components in the event of a major component failure.

10.5.7 In terms of the IEMA Guidelines, such a small number of traffic movements and the associated percentage uplift over baseline traffic movements are not significant. Consequently, it is proposed that a detailed numeric assessment of operational effects is scoped out of the EIA assessment.

Decommissioning Impacts and Effects

10.5.8 Prior to decommissioning of the site, a traffic assessment would be undertaken, and appropriate traffic management procedures would be followed.

10.5.9 The decommissioning phase would result in fewer trips on the road network than the construction phase as it is likely that elements of infrastructure such as access tracks and electrical connections would be left in place and components could be broken up on-site to allow transport by reduced numbers of standard HGVs.

10.5.10 As decommissioning would result in fewer vehicle trips on the road network than the construction phase, assuming the baseline has not substantially changed, the significance of any effects would not be greater. Consequently, it is proposed that a detailed numeric assessment of decommissioning effects is scoped out of the EIA assessment.

10.6 Potential Mitigation

10.6.1 Proposed mitigation against the impacts of general construction traffic and to enable the movements of Abnormal Indivisible Loads (AILs) will be identified and discussed. This will

include methods of working that would be introduced through a Construction Traffic Management Plan (CTMP) and a Traffic Management Plan (TMP) relating to the movement of AILs as well as physical measures such as road widening. Frameworks for both plans will be included in the Transport and Access Chapter and Appendix.

10.6.2 The CTMP will promote best practice in many areas such as requiring sheeting of delivery vehicles to reduce dust and stop spillage on public roads, installing wheel wash facilities at the site entrance and installing appropriate traffic management to minimise conflict with general traffic.

10.6.3 Measures specific to the site will also be included such as a commitment for construction traffic to travel through villages at 20mph and managing deliveries to take place outside school drop off and pick up times.

10.6.4 The Traffic Management Plan for the movement of AILs will consider items such as advance warning signage, operation and management of convoys and communication procedures.

10.7 Questions

- **Do you agree that the scope of the proposed assessment is appropriate?**
- **Do consultees agree that it is appropriate to scope out detailed numeric assessments of operational and decommissioning effects from the EIA?**
- **Do consultees agree with the proposed study area?**
- **Do consultees agree with the proposed traffic data count points?**
- **Do consultees agree with the proposed methodology for calculating base traffic flows?**

11 Noise and Vibration

11.1 Introduction

11.1.1 This chapter sets out the proposed approach to the assessment of potential effects from noise and vibration, during construction, operation and decommissioning of the Proposed Development.

11.2 Legislation, Policy and Guidance

11.2.1 The construction noise assessment will be undertaken in accordance with the methodology outlined in British Standard (BS) 5228: Part 1: 2009.

11.2.2 The operational noise assessment will be undertaken 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).

11.3 Proposed Scope of Assessment

Construction Noise

11.3.1 Noise emitted during the construction phase will be temporary and short term in nature and can be minimised through careful construction practices. The effective control of these impacts can be achieved by way of a suitable planning condition. Construction noise can be controlled post consent (should consent be granted) through the use of two legislative instruments which address the effects of environmental noise with regard to construction noise, vibration, and nuisance:

- The Environmental Protection Act 1990 (EPA); and
- The Control of Pollution Act 1974 (CoPA).

11.3.2 The CoPA provides two means of controlling construction noise and vibration:

- Section 60 provides the Local Authority with the power to impose at any time operating conditions on the site.
- Section 61 allows the Applicant to negotiate a set of operating procedures with the Local Authority prior to commencement of site works.

11.3.3 A construction noise assessment will be undertaken to determine the potential noise impacts during the construction phase of the Proposed Development. The construction noise assessment will be undertaken in accordance with the methodology outlined in British Standard (BS) 5228: Part 1: 2009. Impacts will be assessed using criteria contained within BS 5228-1: 2009 and, where appropriate, mitigation measures will be proposed.

11.3.4 An assessment of the potential noise emissions during the decommissioning phases of the Proposed Development will also be undertaken as part of the construction noise assessment. The impacts of the decommissioning phase will be assessed and, where appropriate, mitigation measures will be proposed.

Operational Noise

11.3.5 ETSU-R-97 recommends that noise limits should be set relative to existing background noise levels at the nearest receptors and that these limits should reflect the variation in background noise with wind speed. Separate noise limits apply for daytime and for night-time periods. Daytime limits are chosen to protect a property's external amenity, and night time limits are chosen to prevent sleep disturbance indoors, with windows open.

11.3.6 For day-time periods (0700 to 2300 hours), the noise limit is 35-40 dB LA90, or 5 dB (A) above the 'quiet day-time hours' prevailing background noise, whichever is the greater. The actual value within the 35-40 dB(A) range depends on the number of dwellings in the vicinity; the effect of the limit on the energy generated; and the duration and level of exposure.

11.3.7 For night-time periods (2300 to 0700 hours) the noise limit is 43 dB LA90, or 5 dB(A) above the prevailing night-time hours background noise, whichever is the greater.

11.3.8 For single turbines or wind farms with very large separation distances between the turbines and the nearest properties, as is the case with the Proposed Development, a simplified noise condition may be suitable whereby noise is restricted to the minimum ETSU-R-97 level of 35 dB LA90 for wind speeds up to 10 m/s at 10 m height.

The noise levels predicted to be generated by the Proposed Development, in combination with the noise from any nearby consented or existing wind farms, have been compared with this limit to determine whether a simplified ETSU-R-97 assessment, without the need for baseline noise measurements, would be sufficient. **The comparison (Appendix 11.1) showed that the simplified limit is predicted to be met such that background noise measurements would not be deemed necessary in accordance with the guidance.**

11.3.9 ETSU-R-97 details a methodology for establishing noise limits for proposed wind farm developments and these limits should not be exceeded. An assessment undertaken in accordance with ETSU-R-97 and current good practice will be included within the EIA Report. Predicted wind turbine noise levels, calculated using the ISO 9613-2 propagation model in accordance with the recommendations of the Institute of Acoustics Good Practice Guide, will be compared to the limits established in accordance with ETSU-R-97. Achievement of the noise limits will be a key design criterion during the site design process. In order to assess operational noise impacts in accordance with ETSU-R-97, the following steps are required:

- specify the location of the proposed wind turbines;
- identify the locations of the nearest, or most noise sensitive neighbours;
- specify the noise emission characteristics of a candidate wind turbine suitable for the Proposed Development;
- calculate the noise immission levels due to the operation of the Proposed Development as a function of on-site wind speed at the nearest neighbours;
- determine the noise limits in accordance with ETSU-R-97; and
- compare the calculated wind turbine noise levels with the noise limits to assess compliance with ETSU-R-97.

11.3.10 It is considered (given the separation distances) that it is unlikely that vibration from the construction and operation of the Proposed Development would have a significant effect on receptors. It is therefore proposed that vibration is Scoped Out of the EIA.

Cumulative

11.3.11 A cumulative noise assessment is required where there is potential for an increase in noise effects from the operation of two or more wind farms at any property surrounding a development. In this regard, the existing Gordonbush, Kilbraur and Kilbraur Extension schemes along with the consented Gordonbush Extension have been identified as potentially relevant when considering potential cumulative noise effects.

11.3.12 The assessment will be undertaken in accordance with current best practice and the schemes above will be modelled and accounted for as part of the EIA Report.

11.4 Baseline Conditions

11.4.1 The noise character of the area and likely background noise levels are expected to be typical of a rural environment.

11.5 Potential Effects

11.5.1 Noise emissions from modern wind turbines are either mechanical (from machinery housed within the nacelle) or aerodynamic (noise from the movement of the blades through the air

around the horizontal axis). Noise emissions from the mechanical equipment housed within the nacelles has been reduced significantly through technological improvements and noise insulation of the nacelle. As such the characteristic noise from wind turbines is the aerodynamic noise of the air moving over the blades.

11.5.2 Causes of potential noise impacts to be assessed are:

- construction noise due to construction plant and construction traffic; and
- operational noise from the turbines.

11.5.3 Noise emitted during the operational phase of the Proposed Development is not expected to be significant as achievement of the relevant noise limits will form a key part of the site design.

11.5.4 However, the significance of the effects will be assessed[11] and presented as part of the EIA Report.

11.6 Potential Mitigation

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

11.6.2 It is envisaged that site design will ensure relevant noise limits will be achieved.

11.7 Questions

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

11.7.2 **Do you agree that it is appropriate to scope out a background noise survey?**

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

12 Aviation

12.1 Introduction

12.1.1 The Applicant has completed an initial appraisal of the potential interactions with aviation and radar signals surrounding the site. This appraisal indicates that there is potential for an impact on the Primary Surveillance Radar at RAF Lossiemouth. Further, formal consultation with the Ministry of Defence will be undertaken.

12.2 Legislation, Policy and Guidance

12.2.1 The main guidance document for wind farm development with potential impact on radars and aviation is CAP 764, CAA Policy and Guidelines on Wind Turbines.

12.3 Proposed Scope of Assessment

12.3.1 Consultation will be undertaken with the following consultees to establish if the Proposed Development will have an effect on their interests:

[11] ETSU-R-97, 'The Assessment of Rating of Noise from Wind Farms', defines a procedure for assessing and rating wind farm noise and is recommended for use by Planning Advice Note 1/2011 'Planning and Noise'.

- Ministry of Defence and Defence Infrastructure Organisation– representing military aviation interests;
- Highlands and Islands Airports Limited (HIAL) – representing civil aviation interests in the Highland area and
- Civil Aviation Authority – national aviation regulator.

12.3.2 The responses of these organisations will guide the scope of the assessment. It is not possible to accurately determine the scope of the assessment, as it is necessary to understand how the Proposed Development interacts with the specific operational procedures and regulations of the specific consultees.

12.4 Baseline Conditions

12.4.1 The initial indication of any potential impacts on radar and aviation is to assess the radar line of sight visibility. This provides a baseline from which to disregard or investigate further any impacts. This assessment has been completed and identified the MOD as the main stakeholder with whom further consultation will be necessary. The impact on operations at Inverness Airport is not expected to be significant but consultation will be conducted with HIAL to ensure this is the case.

12.5 Potential Effects

Construction Impacts and effects

12.5.1 It is not anticipated that the construction phase of the Proposed Development will have any significant effects on aviation or radar receptors. However, the MOD Defence Geographic Centre will be informed of turbine erection dates, turbine locations and tallest crane heights prior to construction so that aviation charts can be updated accordingly to warn aviators of the presence of the wind farm construction activities.

Operational Impacts and Effects

12.5.2 There is potential that the turbines at Kintradwell could create issues to aviation during the operational phase of the project. The two primary effects are:

- Creating a physical obstruction to air traffic; and
- Interference with aviation radar operations.

12.6 Potential Mitigation

12.6.1 There are a number of mitigation options available to alleviate problems caused by wind turbines to aviation and aviation radar. The mitigation solutions range from removal of turbines in problematic areas, to complex technical hardware solutions.

12.6.2 Mitigation solutions are highly specific to the effect in questions. Consultation with relevant consultees is key to establishing the appropriate method of mitigation, if required.

12.7 Questions

12.7.1 **Will the replacement of the RAF Lossiemouth Primary Radar, under Marshall, help or hinder the possibility of identifying an onshore wind farm radar mitigation solution?**

13 Potential Grid Connection

13.1.1 The specific configuration of the grid connection between the wind farm and the grid network is not yet finalised. It is hoped that all grid connection infrastructure will be within the red line boundary of the Proposed Development's S36 application. If this is the case, the potential grid connection options will be described in the EIA Report and consideration of the environmental effects of the indicative grid connection included within the assessment.

13.1.2 If the grid connection between the wind farm and the grid network is not within the red line boundary of the S36 application, the grid connection will be subject to a separate application under Section 37 of the Electricity Act 1989.

13.1.3 The detailed environmental studies and reporting associated with the grid connection shall accompany that application. However, if sufficient detail is available from the Network Operator the EIA Report for the Proposed Development will include consideration of the environmental effects of an indicative grid route corridor.

13.1.4 **Do you agree that the approach with respect to the potential grid connection 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 Socio-economic, Recreation and Tourism

15.1.1 The socio-economic, recreation and tourism benefits of the Proposed Development will be detailed in the EIA Report and accompanying Planning Statement, with any potential impacts assessed where appropriate within the various technical chapters of the EIA (e.g. LVIA and Archaeology & Cultural Heritage). It is therefore considered that socio-economic, recreation and tourism does not warrant its own chapter within the EIA Report.

15.1.2 **Do you agree that socio-economic, recreation and tourism will be well covered across the EIA and as such does not require its own chapter within the EIA?**

15.2 Television and Telecommunications

Television

15.2.1 Digital television signals are much better at coping with signal reflections than analogue, and digital television pictures do not suffer from ghosting (Ofcom, 2009).

15.2.2 It is anticipated that television reception in the vicinity of the site is provided by transmitters to the south (Rosemarkie and Knockmore)[12]. i.e. the proposed wind turbines are unlikely to sit between the transmitter and receiver.

15.2.3 Consequently, the risk of in interference is considered to be low and as such could be addressed by an appropriately worded condition.

15.2.4 It is therefore proposed that an assessment of potential effects on television is scoped out of the EIA assessment.

Satellite Television Reception

15.2.5 Satellite TV reception is not generally affected by new structures unless the development blocks the 'line-of-sight' between a dish antenna and the satellite in the sky. With satellite signals received from a high elevation, disruption to signals is usually limited to cases where a tall structure is erected very close to a receiver (Ofcom, 2009).

15.2.6 Given the separation distance from neighbouring infrastructure (c.3.4km), it is considered highly unlikely that the Proposed Development would impact on satellite television reception.

15.2.7 It is therefore proposed that an assessment of potential effects on satellite television reception is scoped out of the EIA assessment.

Other Terrestrial Broadcasts

15.2.8 Broadcast radio (FM, AM and DAB digital radio) are transmitted on lower frequencies than those used by terrestrial TV signals. Lower frequency signals tend to pass through obstructions more easily than the higher frequency TV signals, and diffraction effects also become more significant at lower frequencies. Both these factors will tend to lessen the impact of new structures on radio reception (Ofcom, 2009).

15.2.9 It is anticipated that broadcast radio reception in the vicinity of the site is provided by transmitters to the south. i.e. the proposed wind turbines are unlikely to sit between the transmitter and receiver[13].

15.2.10 Consequently, the risk of in interference is considered to be low.

15.2.11 It is therefore proposed that an assessment of potential effects on broadcast radio is scoped out of the EIA assessment.

Fixed Links

15.2.12 Ofcom licenses a large number of fixed wireless services over a wide range of frequencies. These are known as fixed links and are used by licensees for a number of uses. Example uses

[12] https://www.bbc.co.uk/receptionsearch

[13] https://www.bbc.co.uk/receptionsearch

include, remote monitoring of unattended equipment (scanning telemetry), data transfer between business premises, and voice communication.

15.2.13 The wide range of frequencies and distances involved, make it difficult to generalise the impact a development may have on fixed links (Ofcom, 2009).

15.2.14 Any potential effects on fixed links will be sought through formal consultation with Ofcom (Spectrum) and all relevant link operators. Where possible and applicable, the turbines will be designed to take into account the minimum separation distance from identified communication link(s). An assessment will be made as to the significance of potential operational effects and where appropriate, suitable mitigation measures will be discussed.

Questions

15.2.15 **Do you agree that it is appropriate to scope out an assessment of potential effects on television from the EIA?**

15.2.16 **Do you agree that it is appropriate to scope out an assessment of potential effects on satellite television reception from the EIA?**

15.2.17 **Do you agree that it is appropriate to scope out an assessment of potential effects on broadcast radio from the EIA?**

15.2.18 **Do you agree that the approach to television and telecommunications is appropriate?**

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 136m, so the area where shadow flicker could be a problem extends to a maximum of 1.36km.

15.3.6 With there being no residential properties within 1.36km, 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 To further minimise the risk, the following mitigation measures will be taken:

- Service crews will be trained regarding the potential for ice throw.
- Ice risk conditions will be monitored by the wind farm operator.
- Public notices will be displayed 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 residential amenity (i.e. visual impact, noise and shadow flicker where scoped in to the EIA). It is therefore proposed that a specific 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 It is therefore proposed that an assessment of the risk of major accidents and/or disasters is scoped out of the EIA.

15.6.4 **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 A9.

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 is limited tree coverage on the site, with no forestry in the areas being considered for wind turbines. Consequently, it is not envisaged that significant tree felling will be required.

15.8.2 The turbine transportation route may require the trimming, or felling, of trees to ensure the safe transportation of turbine components. The requirement for this, and the consultation required to ensure relevant approvals, will be detailed in the EIA.

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

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

15.9 Waste Strategy

15.9.1 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.

15.9.2 **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.

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 It is therefore considered that public access does not warrant its own chapter in the EIA Report.

15.10.5 **Do you agree that public access does not warrant its own chapter in the EIA Report.?**

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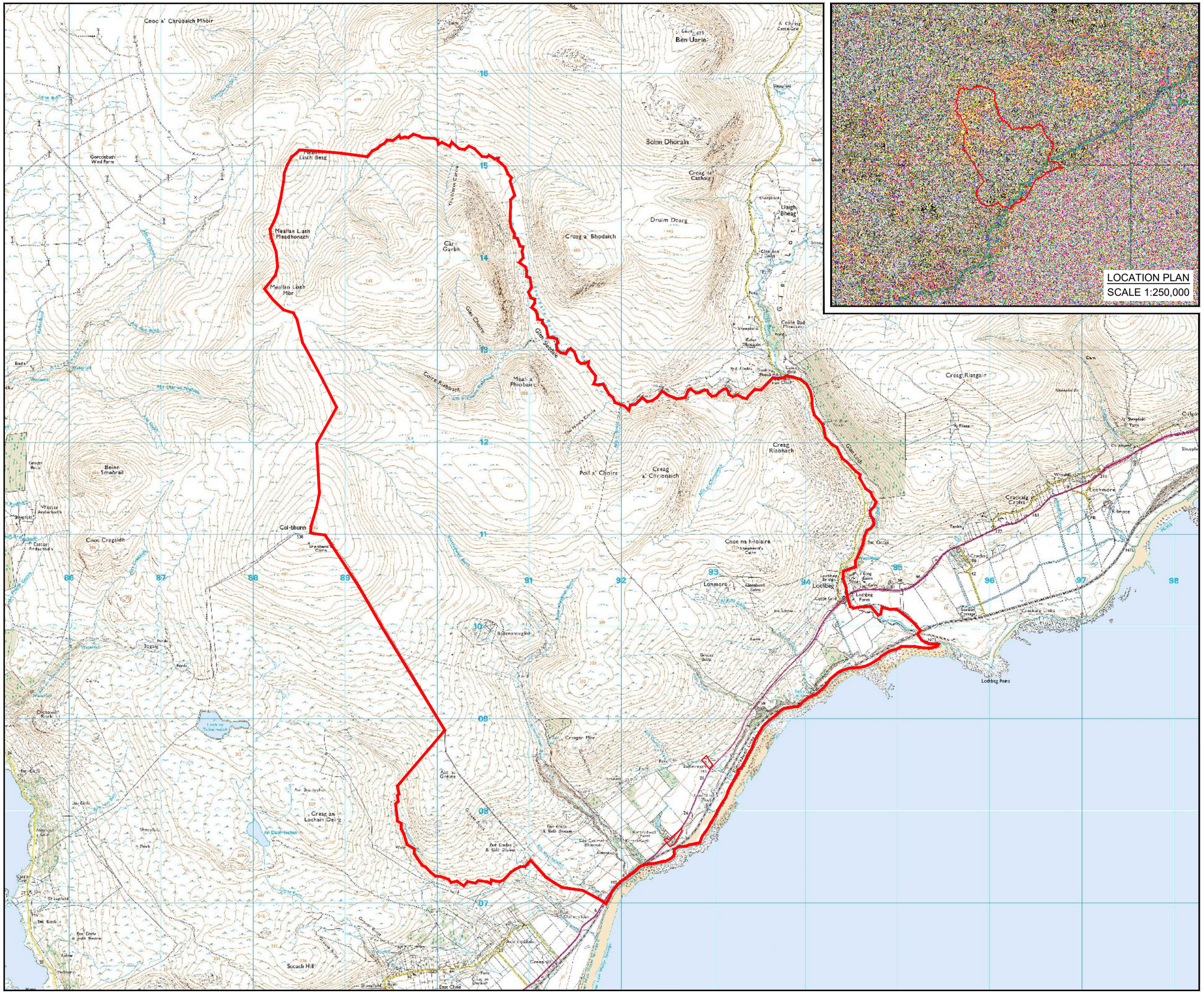

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KEY

DEVELOPMENT AREA

SITE LOCATION - NOT TO SCALE

ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
02	CT	JA	JP	16-08-2019	FIGURE 1.1 ADDED
01	CT	JA	JP	14-08-2019	FIRST ISSUE

LAYOUT DWG: N/A

T-LAYOUT NO.: N/A

DRAWING NUMBER: 03501D2505-01

COORDS: British National Grid

PURPOSE: PRELIMINARY

SCALE: 1:40,000

ORIGINAL PLOT SIZE: A3

PROJECT TITLE: KINTRADWELL WIND FARM

DRAWING TITLE: FIGURE 1.1 - PROPOSED DEVELOPMENT

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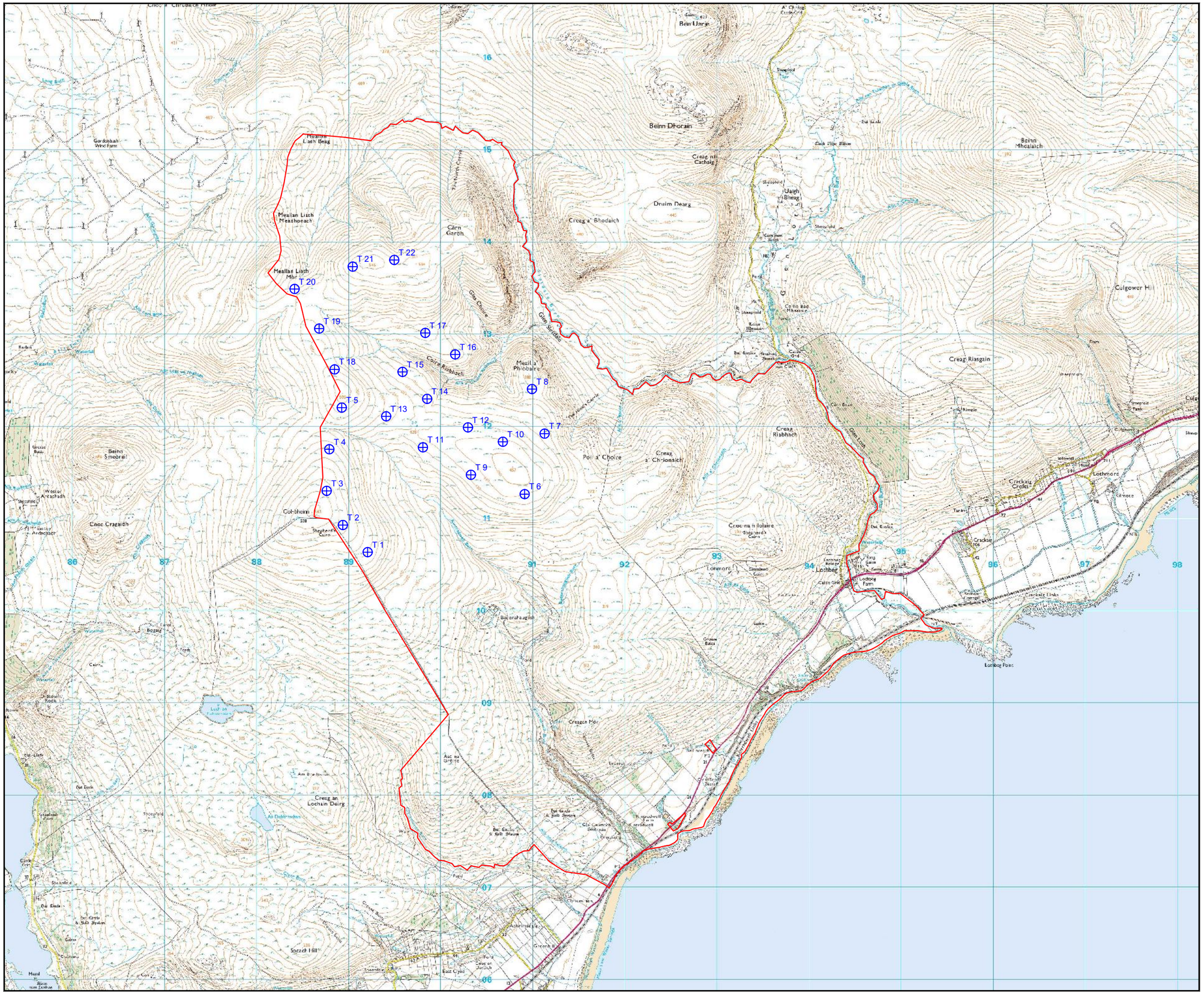

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KEY

T — INDICATIVE TURBINE LOCATIONS

SITE BOUNDARY

TURBINE ID	EASTING	NORTHING
T1	289208	910633
T2	288938	910928
T3	288763	911298
T4	288792	911750
T5	288926	912202
T6	290914	911263
T7	291131	911920
T8	290994	912404
T9	290330	911472
T10	290678	911831
T11	289809	911771
T12	290298	911987
T13	289409	912107
T14	289854	912297
T15	289587	912590
T16	290160	912779
T17	289834	913014
T18	288848	912618
T19	288681	913061
T20	288413	913490
T21	289045	913733
T22	289497	913806

ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
01	CT	JA	JP	16-08-2019	FIRST ISSUE

LAYOUT DWG: 03501D0001-01

T-LAYOUT NO.: PSCOktw016

DRAWING NUMBER: 03501D0002-01

COORDS: British National Grid

PURPOSE: PLANNING

SCALE: 1:40,000

ORIGINAL PLOT SIZE: A3

PROJECT TITLE: KINTRADWELL WIND FARM

DRAWING TITLE: FIGURE 1.2 - INDICATIVE TURBINE LAYOUT

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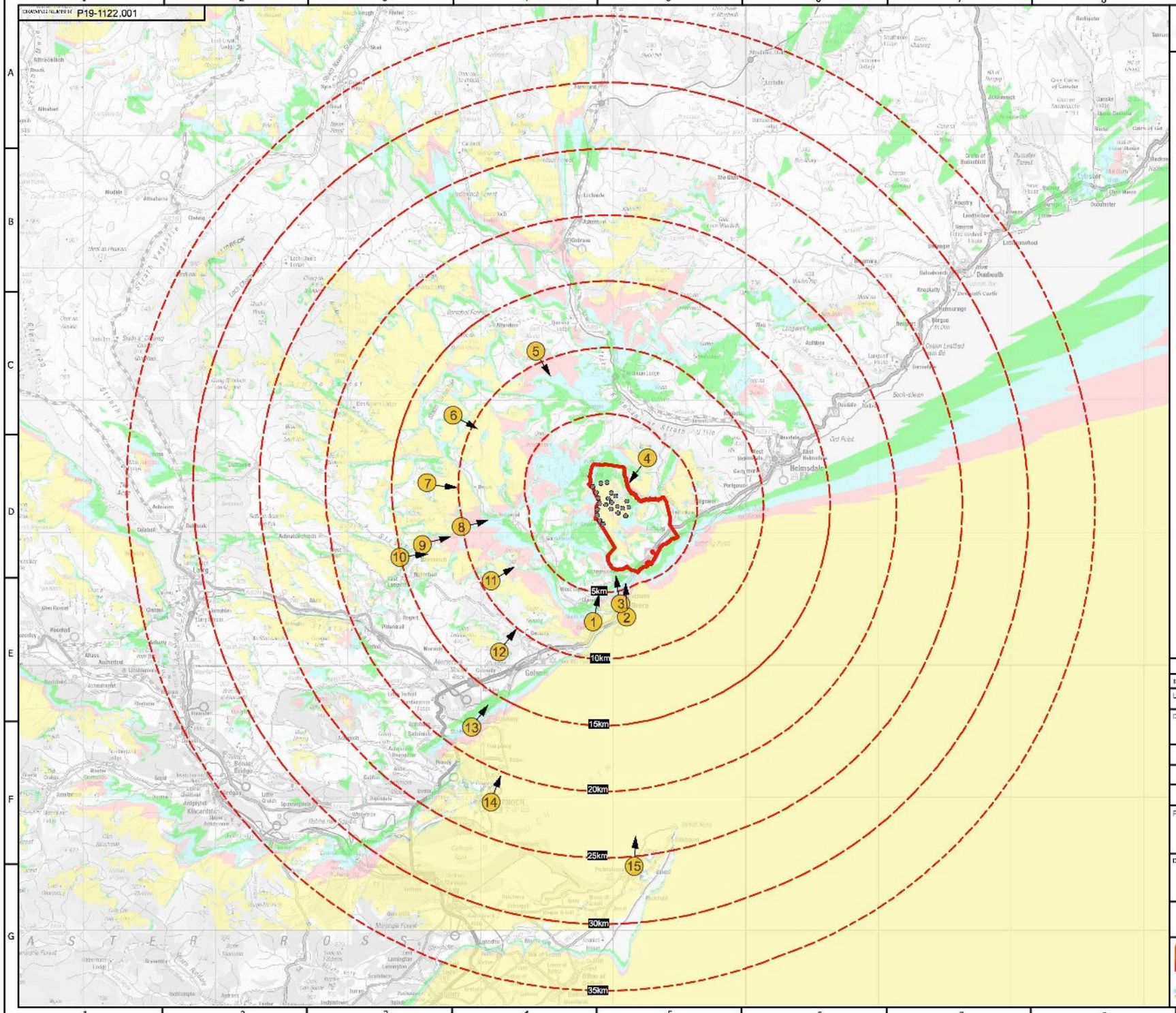
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Bonar Bridge
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Lairg
Doll
Kinbrace
Forsinard
Melvich
Bettyhill
Tongue
Durness
Kinlochbervie
Scourie
Lochinver
Ullapool
Gairloch
Torridon
Kyle of Lochalsh
Kyle of Sutherland
Loch Fleet
Loch Brora
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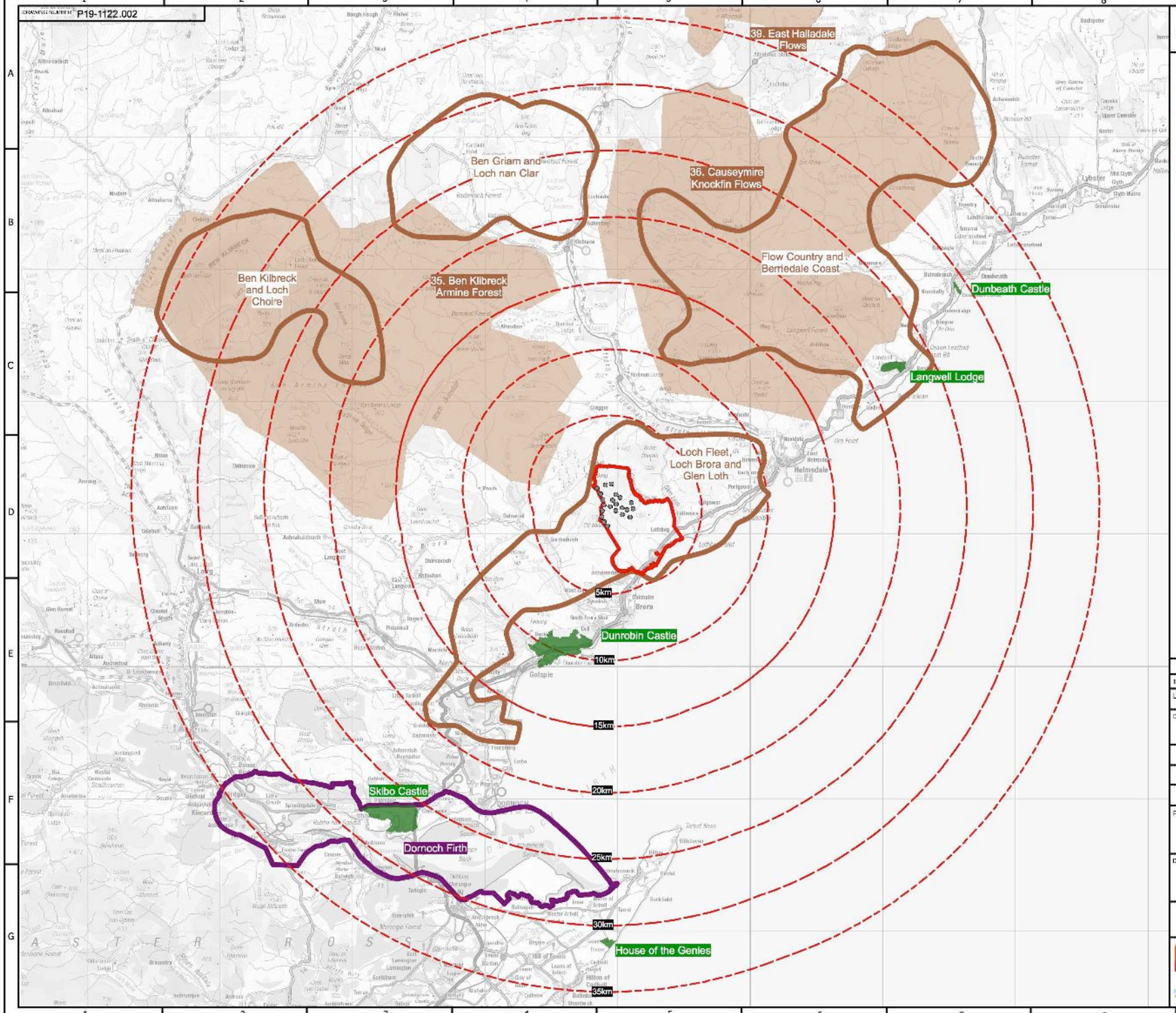
Loch Maree
Loch Carron
Loch Alsh



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Key

- Site Boundary and Proposed Turbines
- Study Area Radius
- National Scenic Area
- Wild Land Area
- Special Landscape Area
- Garden and Designed Landscape

N

ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES
1	TH	290719	DT	290719	FIRST ISSUE

LAYOUT DWG: N/A
LAYOUT NO.: N/A

DRAWING NUMBER: Figure 5.2 P19-1122.002

COORDS: British National Grid

PURPOSE: Scoping

SCALE 1:280,000
ORIGINAL PLOT SIZE: A3

PROJECT TITLE
KINTRADWELL WIND FARM

DRAWING TITLE
LANDSCAPE DESIGNATIONS

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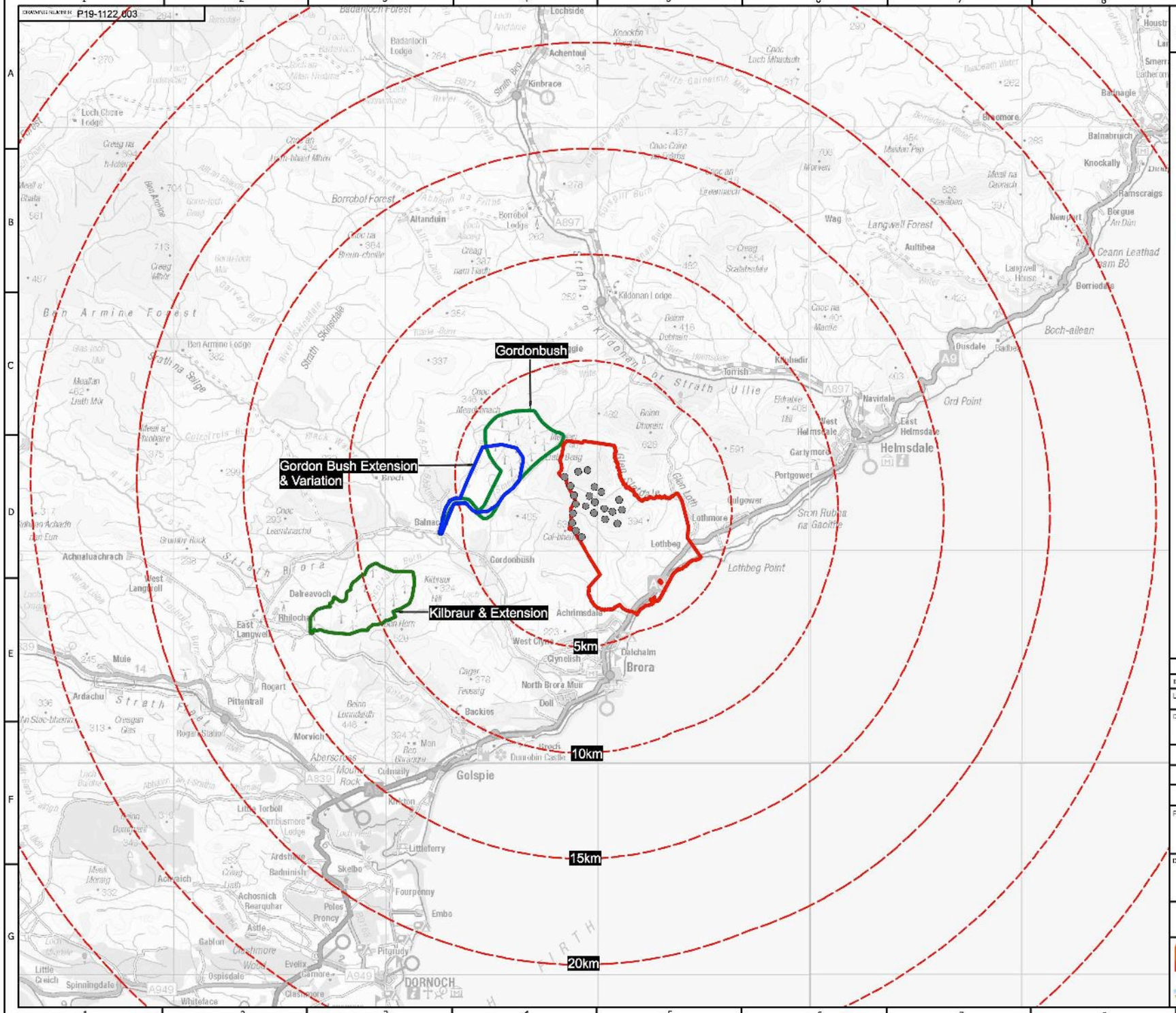
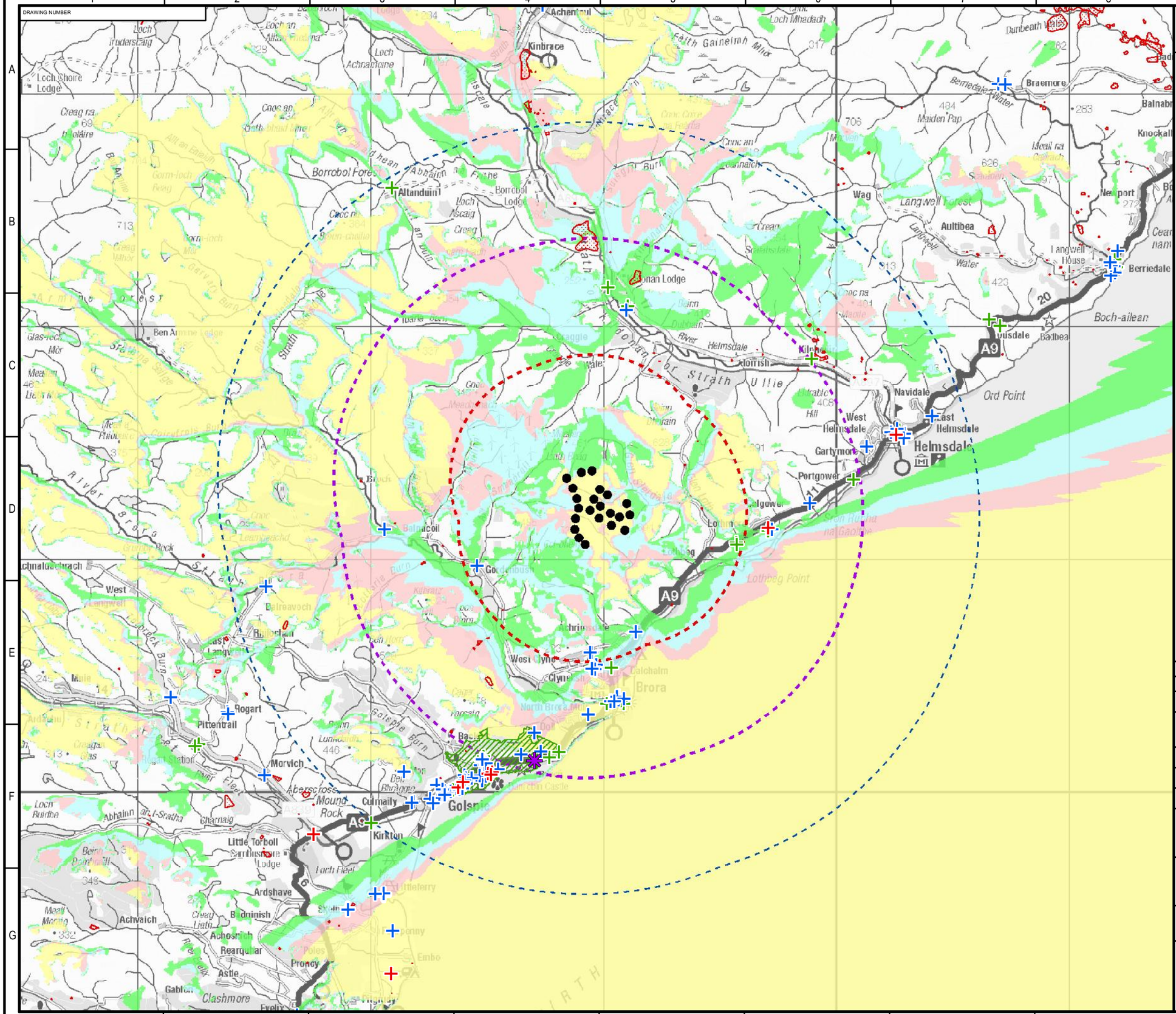

DRAWING NUMBER P19-1122.003
Gordonbush
Gordon Bush Extension & Variation
Kilbraur & Extension
5km
10km
15km
20km
Helmsdale
Brora
Golspie
DORNOCH
Lochside
Kinbrace
Achentoul
Badanloch Forest
Borrobol Forest
Ben Armine Forest
Langwell Forest
Strath Ullie
Strath Brora
Strath Fleet
Lothbeg Point
Ord Point
Boch-ailean
Ceann Leathad nam Bò
Srom Rubha na Gaothe
Glen Loth
Glen Clachan
Kildonan Lodge
Ben Armine Lodge
Borrobol Lodge
Achnaluachrach
Dalreavoch
Rhilochan
Achrimsdale
Gordonbush
Lothbeg
Lothmore
Portgower
Gartymore
Navidale
West Helmsdale
East Helmsdale
Torrish
Kildonan
Ousdale
Badbea
Aultibea
Wag
Berriedale
Borgue
Ramscraigs
Knockally
Balnabruach
Braemore
Balnagie
Langwell House
Newport
Achnamuie
Achnamuie Point
Ardachu
Pittentrail
Rogart
Morvich
Aberscross
Mount Rock
Culmaily
Kilphon
Little Torboll
Ardsheig
Badninish
Skelbo
Fourpenny
Embo
Pitgrudy
Poles
Proncy
Achosnich
Rearquhar
Astle
Gabhan
Cathimore Wood
Evelix
Gamore
Ospisdale
Clashmore
Spinningdale
Little Creich
Whiteface
Mulie
Backies
Doll
North Brora Muir
Clynelish
West Clyne
Dalchalm
Dunrobin Castle
Littleferry
Loch Choire Lodge
Creag na h-Iolaire
Meall a' Bhata
Ben Armine
Meallan Leath Mòr
Meall a' Ghobaire
Creag Mhòr
Creag na Dearcaig
Meall Morag
Creag Liath
Meall Dubhaigh
Meall Ceitlaidh
Meall Cnoc an Daimh
Meall Mòr
Meall Ach a' Mhàraig
Meall Ach na Sròine
Meall Ach an Eich
Meall Ach a' Ghiùsachain
Meall Ach an Ròin
Meall Ach an Ùrain
Meall Ach a' Chuirn
Meall Ach a' Ghiùsachan

DRAWING NUMBER



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Key:

- Scoping Turbine Layout
- 5km Buffer
- Outer Study Area
- 15km Buffer
- Scheduled Monument
- Category A Listed Building
- Category B Listed Building
- Category C Listed Building
- Garden and Designed Landscape
- Property in Care

Number of turbines theoretically visible from the tip

- 1 to 5
- 6 to 11
- 12 to 16
- 17 to 22

1	DRAWN	DATE	APPD	DATE	FIRST ISSUE
ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES

LAYOUT DWG N/A | LAYOUT NO. N/A

DRAWING NUMBER 6.1

COORDS British National Grid

PURPOSE Scoping

SCALE 1:160,000 | ORIGINAL PLOT SIZE A3

PROJECT TITLE
Kintradwell
Wind Farm

DRAWING TITLE
CULTURAL HERITAGE SCOPING:
DESIGNATED HERITAGE ASSETS

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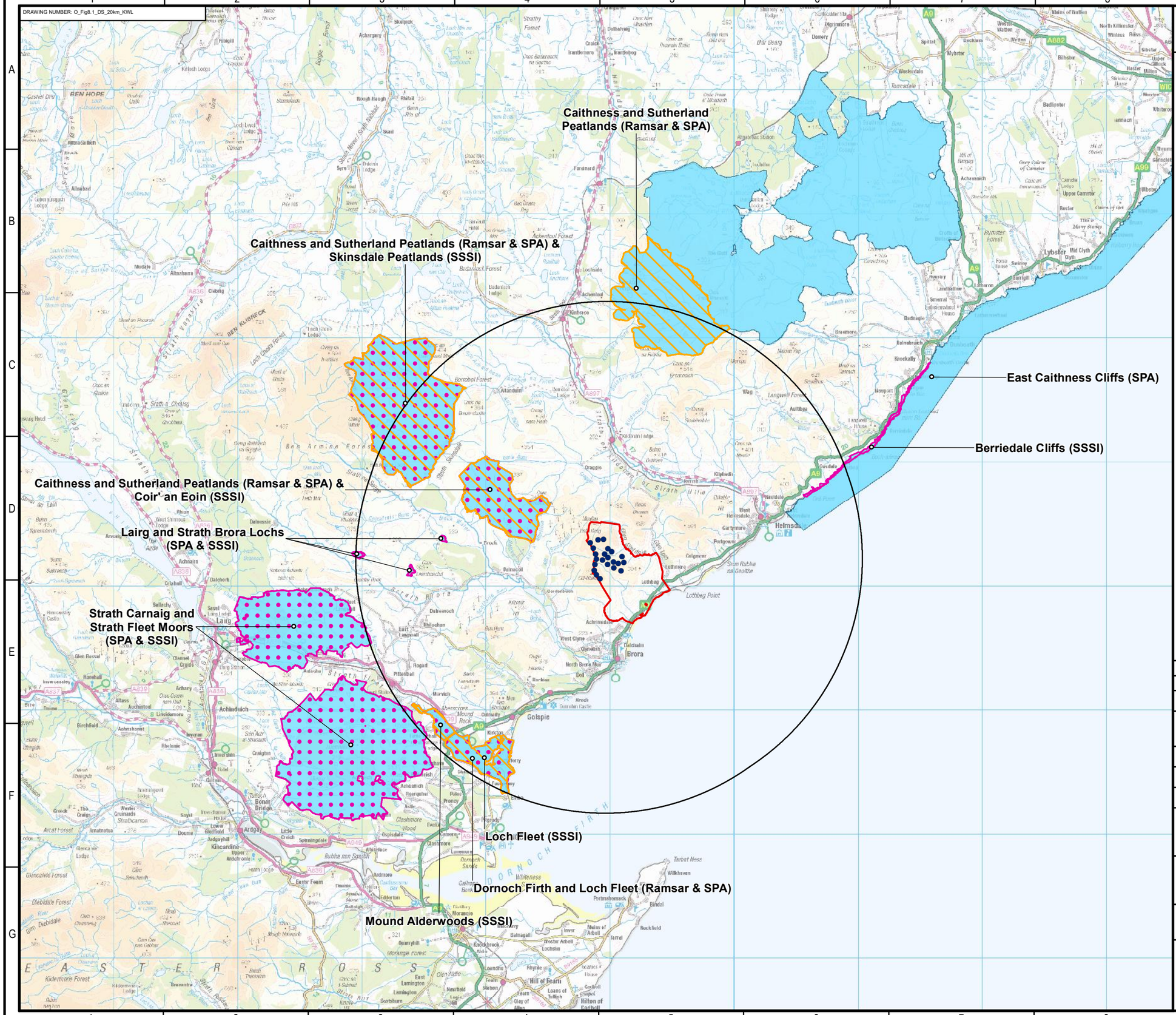
KINGS LANGLEY, HERTS WD4 8LR
TEL +44 (0) 1923 299200
FAX +44 (0) 1923 299299

DRAWING NUMBER: O_Fig8.1_DS_20km_KWL



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Legend:

- Site Boundary
- Proposed Turbine Location
- 20 km Distance Band
- Ramsar Site
- Site of Special Scientific Interest (SSSI)
- Special Protection Area (SPA)

ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES
1	KMS	02/08/19	LNF	02/08/19	FIRST ISSUE

LAYOUT DWG: N/A
LAYOUT NO.: N/A

DRAWING NUMBER: O_Fig8.1_DS_20km_KWL

COORDS: British National Grid

PURPOSE: Scoping

SCALE: 1:300,000
ORIGINAL PLOT SIZE: A3

PROJECT TITLE: Kintradwell Wind Farm

DRAWING TITLE: Ornithological Designated Sites within 20 km

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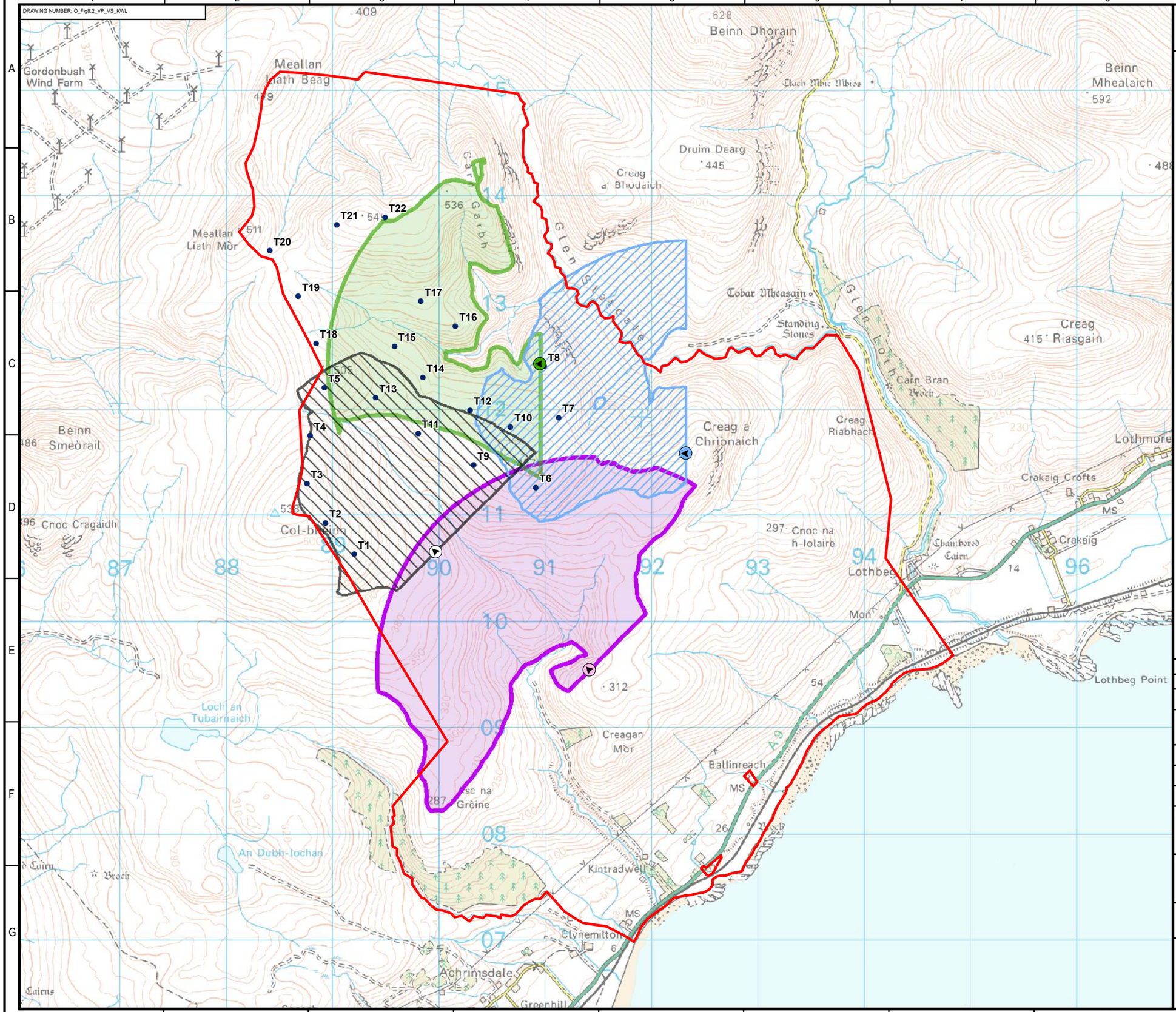
MacArthur Green

DRAWING NUMBER: O_Fig8.2_VP_VS_KWL



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Legend:

- Site Boundary
- Proposed Turbine Location

Vantage points

- 1
- 2
- 3
- 4

Viewsheds

- 1
- 2
- 3
- 4

ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES
1	ATA	29/07/19	LNF	29/07/19	FIRST ISSUE

LAYOUT DWG: N/A

LAYOUT NO.: N/A

DRAWING NUMBER: O_Fig8.2_VP_VS_KWL

COORDS: British National Grid

PURPOSE: Scoping

SCALE: 1:35,000

ORIGINAL PLOT SIZE: A3

PROJECT TITLE: Kintradwell Wind Farm

DRAWING TITLE: Vantage Points and Viewsheds

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MacArthur Green

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Planned Acoustic Assessment of the Proposed Kintradwell Wind Farm

Author: Andrew Birchby **Date:** 2 August 2019 **Ref:** 03501-000396

Prepared:	Andrew Birchby	Signed Electronically: 08-Aug-2019
Checked:	Jeremy Bass	Signed Electronically: 09-Aug-2019
Approved:	Jeremy Bass	Signed Electronically: 09-Aug-2019

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Revision History

Issue	Date	Author	Nature And Location Of Change
01	2 August 2019	Andrew Birchby	First Created

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1.0 INTRODUCTION

The aim of this document is to propose a suitable methodology to assess the acoustic impact of the proposed Kintradwell wind farm.

2.0 METHODOLOGY

The framework most commonly used within the UK for assessing the impact of noise from wind farms is the Department of Trade and Industry's 'The Assessment and Rating of Noise from Wind Farms', hereafter referred to as 'ETSU-R-97' [1]. The methodology described in this document was developed by a working group comprised of a cross section of interested persons including, amongst others, environmental health officers, wind farm operators and independent acoustic experts. It provides a robust basis for assessing the acoustic impact of a wind farm and has been applied at the vast majority of wind farms currently operating in the UK.

The ETSU-R-97 document is endorsed for use in assessing and rating noise from wind energy developments in Scotland by web-based Scottish Government Planning Advice (in addition to developments in England by the National Planning Policy Framework (NPPF), in Northern Ireland by PPS 18 and in Wales by TAN 8) and is therefore recommended for use for the proposed Kintradwell wind farm.

In accordance with the recommendations of ETSU-R-97, the acceptance of the proposed wind farm is established by comparing the noise levels produced by the operation of the proposed wind turbines with appropriate noise limits at nearby residential properties.

The assessment shall follow the procedure outlined in the Good Practice Guide [2], issued by the Institute of Acoustics in May 2013, which provides guidance on all aspects of the use of ETSU-R-97.

2.1 Wind Turbines

The turbine type for the proposed Kintradwell wind farm has not yet been finalised. For the purposes of the assessment a candidate machine shall be proposed which is likely to be acoustically similar to the final turbine selected for use. Acoustic emission data will be taken from the most relevant, reliable and up to date source available.

2.2 Noise Propagation Model

Whilst there are several sound propagation models available, here RES will use the ISO 9613 Part 2 model [3]. The specific interpretation of the ISO 9613 Part 2 propagation model used corresponds to the methodology recommended by a group of independent acousticians experienced in wind farm noise issues in an article published in the Institute of Acoustics Bulletin in February 2009 [4] which was reaffirmed in the subsequent Good Practice Guide [2].

The model takes account of:

- attenuation due to geometric spreading
- atmospheric absorption
- ground effects
- barrier effects

The predicted noise level is changed from the L_{Aeq} to the L_{A90} descriptor by the use of an adjustment factor of -2 dB(A), as specified by ETSU-R-97.

2.3 Noise Limit

The general principle of ETSU-R-97 is that noise limits should be based on existing background noise levels (reflecting the variation in background noise with wind speed) except for very low background noise levels, in which case a fixed limit is applied. However, ETSU-R-97 goes on to state that for wind farms with very large separation distances between the turbines and the nearest properties a simplified noise condition may be suitable:

"if the noise is limited to an $L_{A90,10min}$ of 35 dB(A) up to wind speeds of 10 m/s at 10 m height, then these conditions alone would offer sufficient protection of amenity, and background noise surveys would be unnecessary" [1]

From the noise footprint detailed in Figure 1 it can be seen that this is the case for the proposed Kintradwell wind farm, where the minimum separation distance between a proposed turbine location and nearby properties is greater than 3 km. Figure 2 indicates that the predicted noise levels remain below 35 dB(A) in the cumulative scenario with the existing Gordonbush, Kilbraur and Kilbraur Extension schemes along with the consented Gordonbush Extsnsion project. As such it is proposed that a simplified limit of 35 dB(A) is appropriate for use in the acoustic impact assessment.

Figure 1 Predicted Preliminary Noise Footprint for the Proposed Kintradwell Wind Farm

Turbine locations are indicative only. The footprint shows the $L_{A90,\ 10min}$ at the wind speed corresponding to the maximum predicted noise level calculated using the interpretation of the ISO 9613-2 propagation model recommended by the Institute of Acoustics Good Practice Guide. Grid intervals are 1km.

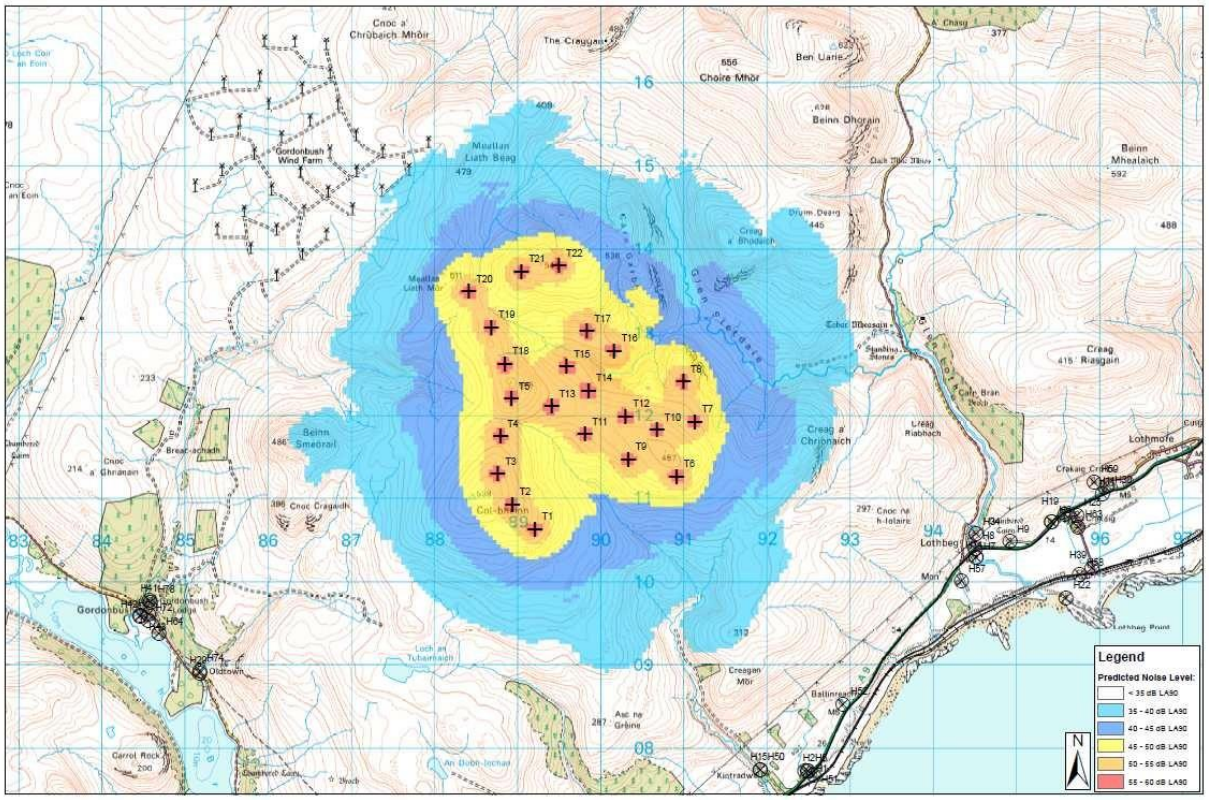

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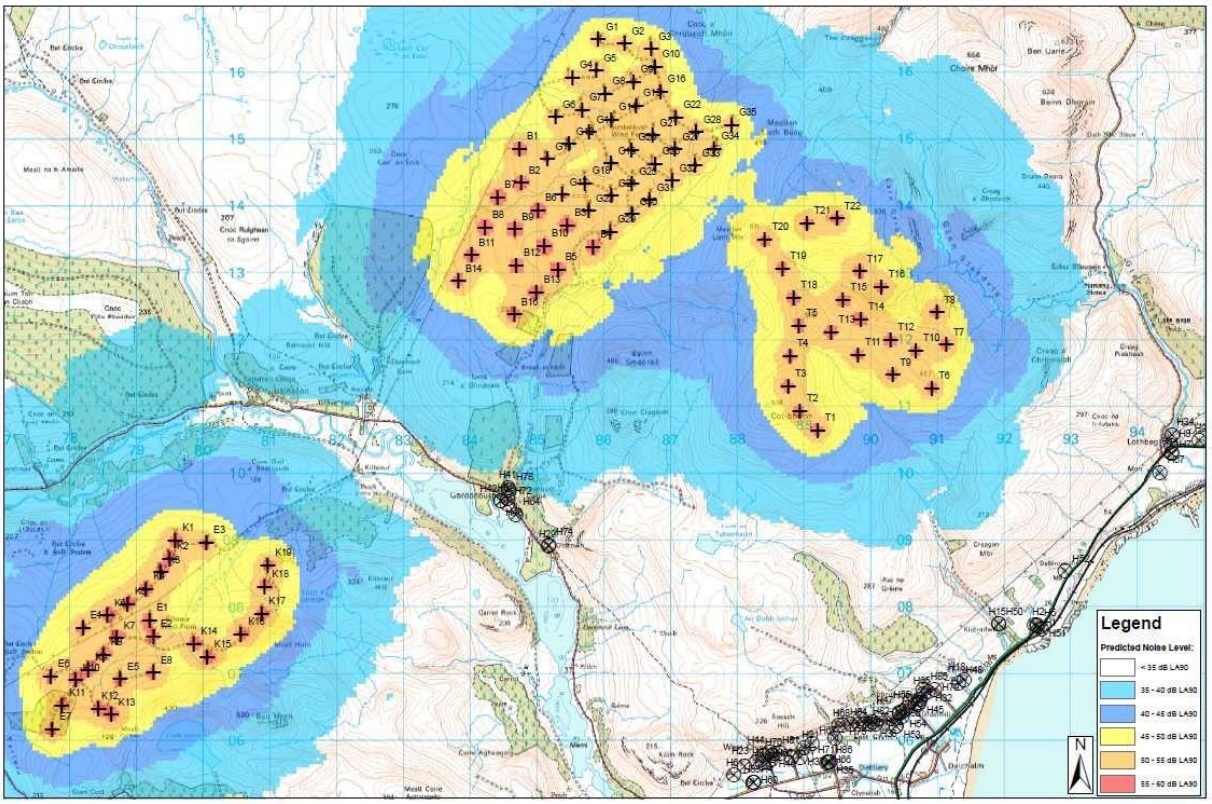
Figure 2 Predicted Cumulative Noise Footprint

Turbine locations are indicative only. The footprint shows the $L_{A90,\ 10min}$ at the wind speed corresponding to the maximum predicted noise level calculated using the interpretation of the ISO 9613-2 propagation model recommended by the Institute of Acoustics Good Practice Guide. Grid intervals are 1km. Turbines prefixed 'T' are the proposed Kintradwell wind farm, those prefixed 'G' are the existing Gordonbush scheme, those prefixed 'B' are the consented Gordonbush Extension scheme, those prefixed 'K' are the existing Kilbraur scheme and prefixed 'E' are the existing Kilbraur Extension scheme.



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2.4 Assessment

The acceptability of the proposed wind farm shall be assessed by comparison of the predicted noise levels at each dwelling to the simplified 35 dB(A) noise limit.

2.5 Cumulative Assessment

An acoustic assessment of the cumulative impact of the proposed Kintradwell wind farm with the existing Gordonbush, Kilbraur and Kilbraur Extension schemes along with the consented Gordonbush Extsnsion project shall also be carried out by comparing the cumulative predicted noise levels at each dwelling to the simplified 35 dB(A) noise limit.

3.0 CONCLUSIONS

It is planned to undertake an assessment of the acoustic impact of the proposed Kintradwell wind farm conforming to the requirements set out in ETSU-R-97 and described within this report.

4.0 REFERENCES

[1] ETSU, "The Assessment and Rating of Noise from Wind Farms", The Working Group on Noise from Wind Turbines, ETSU Report for the DTI, ETSU-R-97, September 1996

[2] Institute of Acoustics, "A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise", May 2013

[3] ISO 9613-2:1996, "Acoustics - Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation", International Organisation for Standardisation

[4] Institute of Acoustics Bulletin volume 34, no 2 "Prediction and Assessment of Wind Turbine Noise", signed by Dr A Bullmore and M Jiggins (Hoare Lea Acoustics), Dr A McKenzie and M Hayes (Hayes McKenzie Partnership), D Bowdler (New Acoustics), R Davis (RD Associates) & Dr G Leventhall

The Scottish Government
Riaghaltas na h-Alba

SCOTTISH GOVERNMENT

ENERGY CONSENTS UNIT

Kintradwell Wind Farm proposal

Scoping Opinion on behalf of the Scottish Ministers Under Part 4 of the Electricity Works (Environmental Impact Assessment)(Scotland) Regulations 2017.

Issued to Renewable Energy Systems Limited

10 October 2019

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1. Introduction

This scoping opinion is issued by the Scottish Government Energy Consents Unit on behalf of the Scottish Ministers to Renewable Energy Systems Limited ("the Company"), a company incorporated under the Companies Acts with company number 01589961 and having its registered office at *Beaufort Court, Egg Fam Lane, Kings Langley, Hertfordshire WD4 8LR*. This was in response to a request, dated 19 August 2019, made by the Company for a scoping opinion under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 in relation to the proposed Kintradwell Wind Farm development ("the proposed Development"). The request was supported by a scoping report which had been produced on behalf of the Company by consultants ITPEnergised.

The area of the site for the proposed Development is approximately 3084 hectares and is located on rough moorland approximately 9.2 kilometres north of Brora in east Sutherland within the administrative area of the Highland Council.

The proposed Development is solely within the planning authority of **the Highland Council.**

At this time, it is expected that that the proposed Development will comprise of 22 turbines each with a rotor diameter of up to 136 metres and a maximum height tip of up to 149.9 metres. The total generation capacity of the proposed Development will be in excess of 50 megawatts. There is also the possibility of battery storage being included as part of the proposed Development.

There will also be ancillary infrastructure including:

- An on-site substation housing at least one transformer and associated switchgear;
- an on-site wind farm control building with welfare facility;
- at least one temporary construction compound;
- laydown areas;
- crane hardstandings & turbine foundations;
- site access and access tracks;
- underground cabling;
- a concrete batching plant;
- potential borrow pit;
- a compound for potential battery storage; and,
- at least one permanent anemometry mast.

The Company indicates (page 10 of 83, paragraph 3.7.1 ***Operational Phase*** of the Scoping Report) that the proposed Development will be operational in perpetuity. In the event that consent under section 36 of the Electricity Act 1989 and deemed planning permission under section 57(2) of the Town and Country Planning (Scotland) Act 1997 are granted by the Scottish Ministers there will be conditions attached in respect of requiring the removal of non-operational elements of the proposed Development and the restoration of parts of the site affected.

2. Consultation

Following the scoping opinion request a list of consultees was agreed between the Company and the Energy Consents Unit. A consultation on the scoping report was undertaken by the Scottish Ministers and this initiated on 20 August 2019. The original deadline for closure of the consultation was 20 September 2019 but this was extended to accommodate extension requests from consultees. The last consultation response was received on 02 October 2019.

The Scottish Ministers also requested responses from their internal advisors Marine Scotland and Transport Scotland. All responses received to the consultation are attached in **Annex A**.

The purpose of the consultation was to obtain scoping advice from each consultee on environmental matters within their remit. Responses from consultees and advisors should be read in full for detailed requirements and for comprehensive guidance, advice and, where appropriate, templates for preparation of the Environmental Impact Assessment report ("the EIA report").

Unless stated to the contrary in this scoping opinion, the Scottish Ministers expect the EIA report to include all matters raised in responses from the consultees and advisors.

No responses were received from the following:

British Horse Society;
Civil Aviation Authority;
Crown Estate Scotland;
Fisheries Management Scotland;
Helmsdale Community Council;
Golspie Community Council;
John Muir Trust;
Kyle of Sutherland Fisheries Trust;
ScotWays;
Scottish Wild Land Group;
Scottish Wildlife Trust;
Visit Scotland.

With regard to those consultees who did not respond, it is assumed that they have no comment to make on the scoping report, but may well be consulted again in the event that an application for section 36 consent is submitted subsequent to this EIA scoping opinion.

The Scottish Ministers are satisfied that the requirements for consultation set out in Regulation 12(4) of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 have been met.

3. The Scoping Opinion

This scoping opinion has been adopted following consultation with the Highland Council, within whose area the proposed Development would be situated. Scottish Natural Heritage ("SNH"), Scottish Environment Protection Agency ("SEPA") and Historic Environment Scotland, were also consulted as statutory consultation bodies along with other bodies which the Scottish Ministers consider likely to have an interest in the proposed Development by reason of their specific environmental responsibilities or local and regional competencies. All responses received to that consultation are contained in **Annex A** of this scoping opinion.

The Scottish Ministers expect the EIA report which will accompany the application for consent under section 36 of the Electricity Act 1989 for the proposed Development, to fully consider **all** the consultation responses in **Annex A**.

The Scottish Ministers adopt this scoping opinion having taken into account the information provided by the applicant in its request dated 19 August 2019 in respect of the specific characteristics of the proposed Development and responses received to the consultation undertaken. In providing this scoping opinion, the Scottish Ministers have had regard to current knowledge and methods of assessment and taken into account the specific characteristics of the proposed Development. The Scottish Ministers have also had regard to the specific characteristics of the type of development the proposed Development will be and the environmental features likely to be affected.

The Scottish Ministers are satisfied with the scope of the proposed EIA as set out in the scoping report. Based the consultation responses, the Scottish Ministers wish to provide comments with regards to the scope of the EIA report. The Company should note and address each matter:

Cumulative assessment

Cumulative assessments should be up to a minimum of 35 kilometres as stipulated by the Highland Council and Mountaineering Scotland.

Wild Land Assessments

Due to the proposed Development's close proximity to a number of Wild Land Areas assessment of impacts will be required. Scope and methodology of said assessments should be decided following discussions between the Company and SNH.

Peat landslide hazard and risk assessment

The Scottish Ministers consider that where there is a demonstrable requirement for peat landslide hazard and risk assessment, the assessment should be undertaken as part of the EIA process to provide the Scottish Ministers with a clear understanding of whether the risks are acceptable and capable of being controlled by mitigation measures. ***The Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Second Edition),*** published at http://www.gov.scot/Publications/2017/04/8868, should be followed in the preparation of the EIA report, which should contain such an assessment and details of mitigation measures.

It should be noted by the Company that the Scottish Ministers engage the services of appropriate specialists to assess Peat Landslide Hazard and Risk Assessments submitted with an EIA report.

Peat Management Plan

The Peat Management Plan to be included in the Construction Environmental Management Plan ("CEMP") should be formulated and finalised following discussions between the Company and SEPA.

Private Water Supplies

The Scottish Ministers request that the Company investigates the presence of any private water supplies which may be impacted by the proposed Development. The EIA report should include details of any supplies identified by this investigation, and if any supplies are identified, the Company should provide an assessment of the potential impacts, risks, and any mitigation which would be provided.

Landscape & visual impact

The advice from the Highland Council regarding presenting Landscape and Visual Impacts should be noted by the Company especially the recommendation in respect of making a distinction between landscape impacts and visual impacts in the EIA report.

Viewpoints & Visualisations

It is recommended by the Scottish Ministers that the final list of viewpoints and visualisations should be agreed following discussion between the Company, the Highland Council, Historic Environment Scotland, SNH, Mountaineering Scotland and the Loth Residents group.

Bird surveys

It is recommended by the Scottish Ministers that decisions on bird surveys – species, methodology, viewsheds & duration: site specific & cumulative – should be made following discussion between the Company, SNH and RSPB Scotland.

Socio-Economic, Recreation and Tourism

There should be a stand-alone chapter in the EIA report specifically dealing with Socio-Economic, Recreation and Tourism.

Aviation

It is recommended by the Scottish Minsters that the Company has discussions with Defence Infrastructure Organisation (Ministry of Defence) to agree mitigation schemes to overcome the interference the turbines of the proposed Development will have on the ATC radar used by RAF Lossiemouth. Discussions at the earliest stage will assist in early resolution being negotiated.

Battery Storage

In the event that battery storage is to be included in the proposed Development, full details of what it will entail (scale, dimensions etc), its location in the site, minimum and maximum export capacity of megawatts and megawatt hours of electricity and a full assessment of its impacts and effects and all proposed mitigation should be included in the EIA report.

Mitigation Measures

The Scottish Ministers are required to make a reasoned conclusion on the significant effects of the proposed Development on the environment as identified in the environmental impact assessment. The mitigation measures suggested for any significant environmental impacts identified should be presented as a conclusion to each chapter. A consolidated schedule of all mitigation measures proposed in the environmental assessment should be provided in tabular form where that mitigation is relied upon in relation to reported conclusions of likelihood of significance of impacts.

4. Conclusion

This scoping opinion is based on information contained in the scoping report submitted on 19 August 2019 and on information available at the date of this scoping opinion. The adoption of this scoping opinion by the Scottish Ministers does not preclude the Scottish Ministers from requiring of the Company, information in connection with an EIA report submitted in connection with any application for section 36 consent for the proposed Development.

This scoping opinion will not prevent the Scottish Ministers from seeking additional information at application stage. For example, there may be a requirement to include cumulative impacts of additional developments which enter the planning process after the date of this opinion.

Without prejudice to that generality, it is recommended that advice regarding the requirement for an additional scoping opinion be sought from the Scottish Ministers in the event that no application for section 36 consent has been submitted within 12 months of the date of this opinion.

The Scottish Ministers are aware that further engagement is required between parties regarding the refinement of the design of the proposed Development regarding, among other things, surveys, management plans, peat, radio links, finalisation of viewpoints, cultural heritage, cumulative assessments and request that they are kept informed of relevant discussions.

Applicants are encouraged to engage with officials at the Scottish Government's Energy Consents Unit at the pre-application stage and before proposals reach design freeze.

Applicants are reminded that there will be limited opportunity to materially vary the form and content of the proposed development once an application is submitted.

When finalising the EIA report, Applicants are asked to provide a summary in tabular form of where within the EIA report each of the specific matters raised in this scoping opinion has been addressed. This specifically includes the responses at Annex A.

It should be noted that to facilitate uploading to the Energy Consents portal, the EIA report and its associated documentation should be divided into appropriately named separate files of sizes no more than 10 megabytes (MB). The energy Consents Unit should be consulted on this and other application-submission requirements in advance of any uploading taking place or application being submitted.

A copy of this scoping opinion will be sent to the Highland Council for publication on their website. It has also been published on the Scottish Government energy consents website at www.energyconsents.scot.

Stephen McFadden
Energy Consents Unit
10 October 2019

ANNEX A Consultation responses

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A1

The Highland Council
Comhairle na Gàidhealtachd

Renewable Energy Systems Limited (RES)
c/o The Scottish Government
Per: Stephen McFadden
Consents Manager
Energy Consents Unit

By email only to:
Stephen.McFadden@gov.scot
REDACTED

Please ask for: Simon Hindson
REDACTED

Our Ref: 19/03792/SCOP
Your Ref:
Date: 25 September 2019

Dear Sir,

PLANNING REFERENCE: 19/03792/SCOP
DEVELOPMENT: KINTRADWELL WIND FARM
LOCATION: LAND 3450M NORTH OF KINTRADWELL LODGE, BRORA
,

Thank you for consulting The Highland Council on the Environmental Impact Assessment Scoping Request for the above project. We received the consultation on 20 August 2019 by email and we are grateful for the extension to make comments until 27 September 2019.

The remainder of this letter constitutes The Highland Council's response to the consultation. Throughout the text we have sought to respond to the questions posed in the Scoping Report where they are applicable to The Highland Council

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THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017

SCOPING RESPONSE TO ENERGY CONSENTS UNIT

Applicant:	**Renewable Enegy Systems Ltd (RES)**
Project:	**Kintradwell Wind Farm**
Project Address:	**Land 3450m North of Kintradwell Lodge, Brora**
Our Reference	**19/03792/SCOP**

This response is given without prejudice to the Planning Authority's right to request information in connection with any statement, whether Environmental Impact Assessment Report or not, submitted in support of any future application. These views are also given without prejudice to the future consideration of and decision on any planning application received by the Council.

The Highland Council request that any Environmental Impact Assessment Report (EIAR) submitted in support of an application for the above development take the comments highlighted below into account; many of which are already acknowledged within the Scoping Report submitted. In particular, the elements of this report as highlighted in parts 3, 4 and 5 should be presented as three distinct elements.

Where responses have been received by internal consultees these are attached and should be taken as forming part of the scoping response consultation from The Highland Council. If any further responses are received these will be forwarded to you as soon as practicably possible.

1.0 Description of the Development.

1.1 The description of development for an EIAR is often much more than would be set out in any planning application. An EIAR must include: -

- a description of the physical characteristics of the whole development and the full land-use requirements during the operational, construction and decommissioning phases. These might include requirements for borrow pits, local road improvements, infrastructural connections (i.e. connections to the grid), off site conservation measures, etc. A plan with eight figure OS Grid co-ordinates for all main elements of the proposal should be supplied.
- a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;
- the risk of accidents, having regard in particular to substances or technologies used;
- an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light / flicker, heat, radiation, etc.) resulting from the operation of the development.
- The estimated cumulative impact of the project with other consented or operation development.

2.0 Alternatives

2.1 A statement is required which outlines the main development alternatives studied by the applicant and an indication of the main reasons for the final project choice. This is expected to highlight the following: -

- the range of technologies that may have been considered;
- locational criteria and economic parameters used in the initial site selection;

- options for access;
- design and locational options for all elements of the proposed development (including grid connection);
- the environmental effects of the different options examined.

Such assessment should also highlight sustainable development attributes including for example assessment of carbon emissions / carbon savings.

3.0 Environmental Elements Affected

3.1 The EIAR must provide a description of the aspects of the environment likely to be significantly affected by the development. The following paragraphs highlight some principal considerations. There are a number of wind energy developments in the area and you are encouraged to use your understanding of these in assessing your development. The EIAR should fully utilise this understanding to ensure that information provided is relevant and robustly grounded.

Land Use and Policy

3.2 The EIAR should recognise the existing land uses affected by the development having particular regard for The Highland Council's Development Plan inclusive of all statutorily adopted supplementary guidance. Particular attention should be paid to the provisions of the Onshore Wind Energy Supplementary Guidance inclusive of the Landscape Sensitivity Appraisal (please note this is an adopted part of the development plan and not draft as stated in the scoping report). This is not instead of but in addition to the expectation of receiving a Planning Statement in support of the application itself which, in addition to exploring compliance with the Development Plan, should look at Scottish Planning Policy and Planning Advice Notes which identify the issues that should be taken into account when considering significant development. Scottish Government policy and guidance on renewable energy and wind energy should be considered in this section. The purpose of this chapter is to highlight relevant policies not to assess the compatibility of the proposal with policy.

Landscape and Visual

3.3 The Council expects the EIAR to consider the landscape and visual impact of the development. The Council makes a distinction between the two. While not mutually exclusive, these elements require separate assessment and therefore presentation of visual material in different ways. It is the Council's position that it is not possible to use panoramic images for the purposes of visual impact assessment. The Council, while not precluding the use of panoramic images, require single frame images with different focal lengths taken with a 35mm format full frame sensor camera – not an 'equivalent.' The focal lengths required are 50mm and 75mm. The former gives an indication of field of view and the latter best represents the scale and distance in the landscape i.e. a more realistic impression of what we see from the viewpoint. These images should form part of the EIAR and not be separate from it. Photomontages should follow the Council's Visualisation Standards:

https://www.highland.gov.uk/downloads/file/12880/visualisation_standards_for_wind_energy_developments

Separate volumes of visualisations should be prepared to both Highland Council Standards and SNH guidance. These should be provided in hard copy. It would be beneficial for the Highland Council volume to be provided in an A3 ring bound folder for ease of use. The use of monochrome for specific viewpoints is useful where there are a number of different wind farms in the view. Without seeing wireframes it is not possible to advise on these at this time. We are happy to provide advice on this matter going forward.

All existing turbines should be re-rendered even if they appear to be facing the viewer in the photograph

to ensure consistency.

3.4 This assessment should include the expected impact of on-site borrow pits and access roads, despite the fact that the principal structures will be a primary concern. All elements of a development are important to consider within any EIAR, including the visual impact of the tracks.

3.5 It should be noted that there are a number of similar applications in this area which are yet to be determined / concluded in the vicinity of this application, many of these have been identified in the scoping report, which may or may not help clarify the weight towards particular policy elements in the final planning balance. We consider that you should undertake the cumulative assessment over 35km to match the visual assessment. As this is the case we recommend that you utilise our interactive Wind Turbine map, which is up to date as of 01 January 2019, to identify other schemes within the study area. The map can be accessed on the link below:

http://highland.gov.uk/windmap

Consultation should also be undertaken with Energy Consents and Deployment Unit as to scheme which are currently at Scoping Stage as these may have advanced at the same pace as your proposal.

3.6 Viewpoints (VP) for the assessment of effects of a proposed development must be agreed in advance of preparation of any visuals with The Highland Council. We are generally content with the viewpoints proposed but appreciate there will be some micrositing of the viewpoints to avoid intervening screening of vegetation boundary treatments etc. We would recommend that the photographer has in their mind whether the VP is representative or specific and also who the receptors are when they are taking the photos it would be helpful. We have also found that if the photographer has a 3D model on a laptop when they go out on site it helps the orientation of the photography.

3.7 Further the Planning Authority would request the following additional viewpoints:

- A9 - Dornoch Bridge
- A897 around Kinbrace
- B871 between Syre and Kinbrace

3.8 As far as possible, the viewpoints should correspond with the viewpoints used for existing wind energy schemes within the area as well as those currently under consideration. We welcome that the Scoping Report identifies those that are shared with the Gordonbush Extension. The detailed location of viewpoints will be informed by site survey, mapping and predicted Zones of Theoretical Visibility. Failure to do this may result in abortive work, requests for additional visual material and delays in processing applications/consultation responses. Community Council's may request additional viewpoints and it would be recommended that any pre-application discussions with the local community takes this into account. The final list of viewpoints should be agreed with the Planning Authority.

3.9 The purpose of the selected and agreed viewpoints shall be clearly identified and stated in the supporting information. For example, it should be clear that the VP has been chosen for landscape assessment, or visual impact assessment, or cumulative assessment, or sequential assessment, or to show a representative view or for assessment of impact on designated sites, communities or individual properties.

3.10 We are content with the 35km study area based on the turbine height of 149.9m to blade tip, as proposed by the applicant. If however the blade tip increases we would seek to review this position. Given the size of the turbines and we would expect a that a detailed assessment of effects should be undertaken for the whole study area.

3.11 When assessing the impact on recreational routes please ensure that all core paths, the national cycle network (inclusive of the Lands End to John O Groats route), long distance trails, and the North Coast 500 are assessed. It should be noted that these routes are used by a range of receptors.

3.12 The development will further extend the number of proposals of this type in the surrounding area, necessitating appropriate cumulative impact. It is considered that cumulative impact will be a significant material consideration in the final determination of any future application. The study area for cumulative

impacts should extend to a minimum of 35km. Given the cumulative impact of renewable energy in this area it is expected that the Applicant should present images for presentation within the Panoramic Digital Viewer deployed by the Council – see visualisation standards document. If the applicant wished to utilise this tool there maybe an associated cost per image to be inserted which should be discussed with the Council prior to submission. To view current or determined schemes in the Council's Panoramic Viewer please see the link below:

http://www.highland.gov.uk/panoramicviewer

3.13 The SNH 2019 landscape character assessment should be used.

3.14 We expect an assessment of the impact on Wild Land Areas to be included within the EIAR given the proximity to a number of Wild Land Areas and the theoretical visibility of the scheme from within wild land areas. SNH will provide further advice on this matter.

3.15 We expect an assessment of the proposal against the criterion set out in the Council's Onshore Wind Energy Supplementary Guidance to be included within the LVIA chapter of the EIAR.

3.16 An assessment of the impacts of the proposal on landscape should assess the impacts on any landscapes designated at a national and local scale. As part of this the impact on the Special Landscape Areas (SLA) must be undertaken using the SLA citations available from the Council's website.

3.17 Aviaition lighting may be required due to the proposed scale and location of the turbines. The affect of the aviation lighting should be assessed through the EIA process. A Lighting Impact Assessment will be required. This is a matter that should be considered from all viewpoints. It should form part of the LVIA chapter of the EIAR but should also be considered as part of the Wild Land Assessment. Further advice on aviation lighting is available from SNH.

3.18 We are content that residential visual amenity is assessed within the LVIA chapter.

Ecology

3.19 The EIAR should provide a baseline survey of the bird and animals (mammals, reptiles, amphibians, etc) interest on site. It needs to be categorically established which species are present on the site, and where, before a future application is submitted. Further the EIAR should provide an account of the habitats present on the proposed development site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans. Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide (see later). Details of any habitat enhancement programme (such as native- tree planting, stock exclusion, etc) for the proposed site should be provided. It is expected that the EIAR will address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.

3.20 The EIAR should provide a baseline survey of the plants (and fungi) and trees present on the site to determine the presence of any rare or threatened species albeit it is accepted that the likelihood is low given the present land use of the site.

3.21 The EIAR should address the likely impacts on the nature conservation interests of all the designated sites in the vicinity of the proposed development. It should provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant. SNH can also provide specific advice in respect of the designated site boundaries for SACs and SPAs and on protected species and habitats within those sites. The potential impact of the development proposals on other designated areas such as SSSI's should be carefully and thoroughly considered and, where possible, appropriate mitigation measures outlined in the EIAR. SNH provide advice on the impact on designated sites.

3.22 If wild deer are present or will use the site an assessment of the potential impact on deer will be required. This should address deer welfare, habitats and other interests.

3.23 The EIAR needs to address the aquatic interests within local watercourses, including down stream interests that may be affected by the development, for example increases in silt and sediment loads

resulting from construction works; pollution risk / incidents during construction; obstruction to upstream and downstream migration both during and after construction; disturbance of spawning beds / timing of works; and other drainage issues. The EIAR should evidence consultation input from the local fishery board(s) where relevant.

3.24 Further advice can be found in SNH's consultation response on ecology in relation to the surveys required and the adequacy of the work already undertaken.

3.25 The EIAR should include an assessment of the effects on Ground Water Dependent Terrestrial Ecosystems (GWDTE). Please see the response from SEPA for detailed advice.

Ornithology

3.26 The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the planning application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted by the EC. Please refer to the comments of SNH in this respect.

3.27 An assessment of the impacts of to birds through collision, disturbance and displacement from foraging / breeding / roosting habitat will be required for both the proposed development site and cumulatively with other proposals. The EIAR should be clear on the survey methods and any deviations from guidance on ornithology matters.

Noise

3.28 Operational Noise

The applicant will be required to submit a noise assessment with regard to the operational phase of the development. The assessment should be carried out in accordance with ETSU-R-97 "The Assessment and Rating of Noise from Wind Farms" and the associated Good Practice Guide published by the Institute of Acoustics.

The target noise levels are either a simplified standard of 35dB LA90 at wind speeds up to 10m/s or a composite standard of 35dB LA90 (daytime) and 38dB LA90 (night time) or up to 5dB above background noise levels at up to 12m/s. The night time lower limit of 43dB LA90 as suggested in ETSU is not considered acceptable in many areas of the highlands due to very low background levels. These limits would apply to cumulative noise levels from more than one development.

3.29 Cumulative Noise

The noise assessment must take into account the potential cumulative effect from any other existing or consented or, in some cases, proposed wind turbine developments. Where applications run concurrently, developers and consultants are advised to consider adopting a joint approach with regard to noise assessments. The noise assessment must take into account predicted and consented levels from such developments. The good practice guide offers guidance on how to deal with cumulative issues.

The assessment should 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 should include a table of figures which includes the following: -

- The predicted levels from this development based at each noise sensitive location (NSL) at wind speeds up to 12m/s
- The maximum levels based on consented limits from each existing or consented wind farm development at each NSL. If any reduction is made for controlling property or another reason,

this should be made clear.

- The predicted levels from each existing or consented wind farm development at each NSL.
- The cumulative levels based on consented and predicted levels at each NSL.

The assessment should also include an outline for a mitigation scheme to be implemented should noise levels from the development be subsequently found to exceed consented levels.

3.30 Background Noise Measurements

Background noise surveys should be undertaken in accordance with ETSU-R-97 and the Good Practice Guide. It is recommended that monitoring locations be agreed with the Council's Environmental Health Officer however, it is unlikely that they will be able to attend the installation of equipment. Where possible, sites must avoid other noise sources such as boiler flues, wind chimes, squeaking gate, rustling leaves etc. Otherwise, the results may not be valid for any other property.

Difficulties can arise where a location is already subject to noise from an existing wind turbine development. ETSU states that background noise must not include noise from an existing wind farm. The GPG offers advice on how to approach this problem and in some cases, it may be possible to utilise the results from historical background surveys. It is advised that the developer consults the Councils Environmental Health Officer at an early stage to discuss the proposed methodology.

3.31 Construction Noise

Planning conditions are not used to control the impact of construction noise as similar powers are available to the Local Authority under Section 60 of the Control of Pollution Act 1974. However, where there is potential for disturbance from construction noise the application will need to include a noise assessment.

A construction noise assessment will be required in the following circumstances: -

- Where it is proposed to undertake work which is audible at the curtilage of any noise sensitive receptor, out with the hours Mon-Fri 8am to 7pm; Sat 8am to 1pm

OR

- Where noise levels during the above periods are likely to exceed 75dB(A) for short term works or 55dB(A) for long term works. Both measurements to be taken as a 1hr LAeq at the curtilage of any noise sensitive receptor. (Generally, long term work is taken to be more than 6 months)

If an assessment is submitted it should 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". Details of any mitigation measures should be provided including proposed hours of operation.

Regardless of whether a construction noise assessment is required, it is expected that the developer/contractor will employ the best practicable means to reduce the impact of noise from construction activities. Attention should be given to construction traffic and the use of tonal reversing alarms.

Amplitude Modulation

3.32 Research has been carried out in recent years on the phenomenon of amplitude modulation arising from some wind turbine developments. However at this time, the Good Practice guide does not provide definitive Planning guidance on this subject. That being the case, any complaints linked to amplitude modulation would be investigated in terms of the Statutory Nuisance provisions of the Environmental Protection Act 1990.

Noise Exposure

3.33 When assessing the cumulative impact from more than one wind farm, consideration must be given to any increase in exposure time. Regardless of whether cumulative levels can meet relevant criteria, if a noise sensitive property subsequently becomes affected by wind turbine noise from more than one direction this could result in a significant loss of respite.

Cultural Heritage

3.34 The EIAR needs to identify all designated sites which may be affected by the development either directly or indirectly. This will require you to identify: -

- the architectural heritage (Conservation Areas, Listed Buildings) and
- the archaeological heritage (Scheduled Monuments),
- the landscape (including designations such as National Parks, National Scenic Areas, Areas of Great Landscape Value, Gardens and Designed Landscapes and general setting of the development.
- the inter-relationship between the above factors.

3.35 We would expect any assessment to contain a full appreciation of the setting of these historic environment assets and the likely impact on their settings. It would be helpful if, where the assessment finds that significant impacts are likely, appropriate visualisations such as photomontage and wireframe views of the development in relation to the sites and their settings could be provided. Visualisations illustrating views both from the asset towards the proposed development and views towards the asset with the development in the background would be helpful.

3.36 Historic Environment Scotland (HES) will provide comment on the assessment methodology for heritage assets within their remit.

3.37 It is anticipated that HES will provide further comments on the scope of the assessment and their requirements for supporting information (including visualisations) and the potential impacts on heritage assets in their consultation response.

3.38 There are a large number of heritage assets in the vicinity of the development, these need to be assessed. HES have provided detailed advice on potential setting impacts.

3.39 We recommend that you liaise with colleagues in the Council's Historic Environment Team on the scope of the archaeological assessments.

Water Environment

3.40 The EIAR needs to address the nature of the hydrology and hydrogeology of the site, and of the potential impacts on water courses, water supplies including private supplies, water quality, water quantity and on aquatic flora and fauna. Impacts on watercourses, lochs, groundwater, other water features and sensitive receptors, such as water supplies, need to be assessed. Measures to prevent erosion, sedimentation or discolouration will be required, along with monitoring proposals and contingency plans. Assessment will need to recognise periods of high rainfall which will impact on any calculations of run-off, high flow in watercourses and hydrogeological matters. You are strongly advised at an early stage to consult Scottish Environment Protection Agency (SEPA) as the regulatory body responsible for the implementation of the Controlled Activities (Scotland) Regulations 2005 (CAR), to identify if a CAR license is necessary and the extent of the information required by SEPA to assess any license application.

3.41 If culverting should be proposed, either in relation to new or upgraded tracks, then it should be noted that SEPA has a general presumption against modification, diversion or culverting of watercourses. Schemes should be designed to avoid crossing watercourses, and to bridge watercourses where this cannot be avoided. The EIAR will be expected to identify all water crossings and include a systematic table of watercourse crossings or channelising, with detailed justification for any such elements and design to minimise impact. The table should be accompanied by photography of each watercourse

affected and include dimensions of the watercourse. It may be useful for the applicant to demonstrate choice of watercourse crossing by means of a decision tree, taking into account factors including catchment size (resultant flows), natural habitat and environmental concerns. Further guidance on the design and implementation of crossings can be found on SEPA's Construction of River Crossings Good Practice Guide.

3.42 The need for, and information on, abstractions of water supplies for concrete works or other operations should also be identified. The EIAR should identify whether a public or private source is to be utilised. If a private source is to be utilised, full details on the source and details of abstraction need to be provided.

3.43 You should 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.

3.44 It is anticipated that detailed comments will be provided on impacts on the water environment, in particular on buffers to water courses, by SEPA.

Geology, Hydrology and Geohydrology

3.45 The EIAR must consider the risks of engineering instability relating to presence to peat on the site. A comprehensive peat slide risk assessment in accordance with the Scottish Government Best Practice Guide for Developers will be expected. Assessment should also address pollution risk and environmental sensitivities of the water environment. It should include a detailed map of peat depth and evidence that the scheme minimises impact on areas of deep peat. The EIAR should include site-specific principles on which construction method statements would be developed for engineering works in peat land areas, including access roads, turbine bases and hard standing areas, and these should include particular reference to drainage impacts, dewatering and disposal of excavated peat.

3.46 The EIAR should include a full assessment on the impact of the development on peat. SEPA have noted that the information collected so far shows that most of the site is on deep peat, with large areas of very deep peat. The assessment of the impact on peat must include peat probing for all areas where development is proposed. The Council are of the view this should include probing not just at the point of infrastructure as proposed by the scheme but also covering the areas of ground which would be subject to micrositing limits.

3.47 SEPA have provided detailed comments on methodology for peat probing and the peat assessment. These comments are supported by the Council.

3.48 Carbon balance calculations should be undertaken and included within the EIAR with a summary of the results provided focussing on the carbon payback period for the wind farm.

3.49 The EIAR should fully describe the likely significant effects of the development on the local geology including aspects such as borrow pits, earthworks, site restoration and the soil generally including direct effects and any indirect. Proposals should demonstrate construction practices that help to minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials. Where borrow pits are proposed the EIAR should include information regarding the location, size and nature of these borrow pits including information on the depth of the borrow pit floor and the borrow pit final reinstated profile. This can avoid the need for further applications.

Roads Infrastructure

3.50 Highland Council's Transport Planning Teams interests will relate largely to the impact of development traffic on the Council maintained road network and its users during the construction phase of the project. It has confirmed that it is generally satisfied with the proposed changes to the methodology. The community have also raised concerns around these matters.

3.51 A Transport Assessment (TA), or section on traffic and transportation, within the Environmental Statement for the project will be required. The TA should identify all roads likely to be affected by the various stages of the development and consider in detail the impact of development traffic, including abnormal load movements, on these roads. Where necessary, the TA should consider and propose measures necessary to mitigate the impact of the development on the road network. Prior to preparation of the TA the developer should first carry out a detailed scoping exercise in consultation with the Council, as local roads authority and, as required, Transport Scotland as trunk roads authority.

3.52 Matters to be included in the Transport Assessment/Transport Statement:

- Identify all public roads affected by the development. In addition to transport of major components this should also include routes to be used by local suppliers.
- Establish current condition of the roads. This work which should be undertaken by a consulting engineer acceptable to the Council and will involve an engineering appraisal of the routes including the following:
    - assessment of structural strength of carriageway including construction depths and road formation where this is likely to be significant in respect of proposed impacts, including non-destructive testing and sampling as required.
    - road surface condition and profile
    - assessment of structures and any weight restrictions
    - road widths, vertical and horizontal alignment and provision of passing places;
    - details of adjacent communities
- Traffic resulting from the proposed development including: -
    - nos. of light and heavy vehicles
    - abnormal loads. In respect of long loads trial runs are required.
    - duration of works
- Current traffic flows including use by school buses, refuse vehicles, commercial users, pedestrians, cyclists and equestrians.
- Impacts of proposed traffic including: -
    - impacts on carriageway, structures, verges etc.
    - impacts on other road users
    - impacts on adjacent communities
    - swept path and gradient analysis where it is envisaged that passage of traffic could be problematic.
- Cumulative impacts with other developments in progress and committed developments.
- Proposed mitigation measures to address impacts identified above including: -
    - details of the proposed site access at its junction with the public road to the standards set out in The Highland Council's Roads and Transportation Guidelines for New Developments available online at:

      http://www.highland.gov.uk/yourenvironment/roadsandtransport/roads/roadsandtransportguidelinesfornewdevelopments.htm
    - carriageway strengthening
    - strengthening of bridges and culverts

- carriageway widening and/or edge strengthening
- provision of passing places
- road safety measures
- traffic management including measures to be taken to ensure that development traffic does not use routes other than the approved routes.
- Details of residual effects.

3.53 The EIAR must consider the implications on the Trunk Road network as part of the EIAR process.

Socio-Economic, Recreation and Tourism

3.54 We consider that this should have its own chapter in the EIAR to ensure that these matters are appropriately addressed and not lost in other assessments. The EIAR should estimate who may be affected by the development, in all or in part, which may required individual households to be identified, local communities or a wider socio economic groupings such as tourists & tourist related businesses, recreational groups, economically active, etc. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction, operation and decommissioning of the development.

3.55 Estimations of who may be affected by the development, in all or in part, which may required individual households to be identified, local communities or a wider socio economic groupings such as tourists & tourist related businesses, recreational groups, economically active, etc should be included. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction, operation and decommissioning of the development. In this regard wind farm development experience in this location should be used to help set the basis of likely impact. This should set out the impact on the regional and local economy, not just the national economy. Any mitigation proposed should also address impacts on the regional and local economy.

3.56 The site is on land with access rights provided by the Land Reform Scotland Act. Access rights on a core path are not enhanced but they are more protected during construction and similar activities. In line with the policies and provisions of the Highland-wide Local Development Plan a plan detailing the following should be submitted as part of the EIAR:

- Existing public non-motorised public access footpaths, bridleways and cycleways on the site and any proposed access route from the public road infrastructure; and
- Proposed public access provision both during construction and after completion of the development, including links to existing path networks (where appropriate) and to the surrounding area, and access points to water.
- Impacts of the proposed development on the core paths and proposed mitigation if any.

We welcome the fact that the EIAR states that the application will be accompanied by an Access Management Plan.

Effects on Existing Infrastructure

3.57 The EIAR needs to recognise community assets that are currently in operation for example TV, radio, tele-communication links, aviation interests including radar, MOD safeguards, etc. In this regard the applicant, when submitting a future application, will need to demonstrate what interests they have identified and the outcomes of any consultations with relevant authorities such as Ofcom, NATS, BAA, CAA, MOD, Highlands and Islands Airports Ltd, etc. through the provision of written evidence of concluded discussions / agreed outcomes. We consider the results of these surveys should be contained within the EIAR to determine whether any suspensive conditions are required in relation to such issues.

3.58 There should be continued dialogue with HIAL over the impact on the radar at airports in the area.

3.59 If there are no predicted effects on communication links as a result of the development, the EIAR should still address this matter by explaining how this conclusion was reached.

Shadow Flicker

3.60 If there are no properties within 11 rotor diameters, which is the Council's approach to shadow flicker due to the lower sun given the latitude of the development, the matter of shadow flicker will not require detailed assessment but should still be addressed in the EIAR.

Trees and Forestry

3.61 Within the boundary of the application site there limited areas of woodland albeit some areas of woodland adjacent to the access may be affected. If any areas of woodland likely to be affected by the development (including its access) the Scottish Government's Control of Woodland removal Policy must be addressed and compensatory planting calculations provided in the EIAR.

3.62 The EIAR should indicate all the areas of woodland / trees that will felled to accommodate the development, including any off site works / mitigation. Compensatory woodland is a clear expectation of any proposals for felling, and thereby such mitigation needs to be considered within any assessment. If so minded, permission is only likely to be granted on the basis that compensatory planting proposals are identified in advance. Compensatory planting should be within the Highland area and not form part of an already approved forestry plan/proposal that has gained FC funding. Areas of retained forestry or tree groups should be clearly indicated and methods for their protection during construction and beyond clearly described. If timber is to be disposed of, details of the methodology for this should be submitted.

Other Matters

3.63 We consider that the EIAR needs to address existing air quality and the general qualities of the local environment including background noise, sunlight, prevailing wind. From this base data information on the expected impacts of any development can then be founded recognising likely impacts for each phases of development including construction, operation and decommissioning. Issues such as dust, air borne pollution and / or vapours, noise, light, shadow-flicker can then be highlighted.

3.64 Depending on the proximity of the working area to houses etc. the applicant may require to submit a scheme for the suppression of dust during construction. Particular attention should be paid to construction traffic movements.

3.65 The EIAR needs to address all relevant climatic factors which can greatly influence the impact range of many of the preceding factors on account of seasonal changes affecting, rainfall, sunlight, prevailing wind direction, etc.

We note that the Report seeks to cover a number of the matters within the CEMD for the proposal. While acceptable in principle we would request that an Outline CEMD is included with the application.

4.0 <u>Significant Effects on the Environment</u>

4.1 Leading from the assessment of the environmental elements the EIAR needs to describe the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from: -

- the existence of the development;
- the use of natural resources;
- the emission of pollutants, the creation of nuisances and the elimination of waste.

4.2 The potential significant effects of development must have regard to: -

- the extent of the impact (geographical area and size of the affected population);
- the trans-frontier nature of the impact;
- the magnitude and complexity of the impact;
- the probability of the impact;
- the duration, frequency and reversibility of the impact.

4.3 The effects of development upon baseline data should be provided in clear summary points.

4.4 The Council requests that when measuring the positive and negative effects of the development a four point scale is used advising any effect to be either strong positive, positive, negative or strong negative.

4.5 The applicant should provide a description of the forecasting methods used to assess the effects on the environment.

5.0 Mitigation

5.1 Consideration of the significance of any adverse impacts of a development will of course be balanced against the projected benefits of the proposal. Valid concerns can be overcome or minimised by mitigation by design, approach or the offer of additional features, both on and off site. A description of the measures envisaged to prevent, reducing and where possible offset any significant adverse effects on the environment must be set out within the EIAR statement and be followed through within the application for development.

5.2 The mitigation being tabled in respect of a single development proposal can be manifold. Consequently the EIAR should present a clear summary table of all mitigation measures associated with the development proposal. This table should be entitled draft Schedule of Mitigation. As the development progresses to procurement and then implementation this carries forward to a requirement for a Construction Environmental Management Document (CEMD) and then Plan (CEMP) which in turn will set the framework for individual Construction Method Statements (CMS). Further guidance can be obtained at

http://www.highland.gov.uk/NR/rdonlyres/485C70FB-98A7-4F77-8D6B-ED5ACC7409C0/0/construction_environmental_management_22122010.pdf

This is currently under review by a working party led by SEPA working through Heads of Planning Scotland but for the time being remains relevant.

5.3 The implementation of mitigation can often involve a number of parties other than the developer. In particular local liaison groups involving the local community are often deployed to assist with phasing of construction works – abnormal load deliveries, construction works to the road network, borrow pit blasting. It should be made clear within the EIAR or supporting information accompanying a planning application exactly which groups are being involved in such liaison, the remit of the group and the management and resourcing of the required effort.

If you would like to discuss this scoping response please contact the Planning Authority REDACTED REDACTED

Simon Hindson
Team Leader – Strategic Projects
REDACTED

The Highland Council
Comhairle na Gàidhealtachd

A14

Scoping Request

Environmental Health Response

Proposal Name	Kintradwell Wind Farm proposal | Land 3450M North Of Kintradwell Lodge Brora
Planning Reference	19/03792/SCOP
Date of Response	29 August 2019

Response

Operational Noise
The applicant will be required to submit a noise assessment with regard to the operational phase of the development. The assessment should be carried out in accordance with ETSU-R-97 "The Assessment and Rating of Noise from Wind Farms" and the associated Good Practice Guide published by the Institute of Acoustics.

The target noise levels are either a simplified standard of 35dB LA90 at wind speeds up to 10m/s or a composite standard of 35dB LA90 (daytime) and 38dB LA90 (night time) or up to 5dB above background noise levels at up to 12m/s. The night time lower limit of 43dB LA90 as suggested in ETSU is not considered acceptable in many areas of the highlands due to very low background levels. These limits would apply to cumulative noise levels from more than one development.

Cumulative Noise
This area already has a significant level of wind turbine development. The noise assessment must take into account the potential cumulative effect from any other existing or consented or, in some cases, proposed wind turbine developments. Where applications run concurrently, developers and consultants are advised to consider adopting a joint approach with regard to noise assessments. The noise assessment must take into account predicted and consented levels from such developments. The good practice guide offers guidance on how to deal with cumulative issues.

The assessment should 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 should include a table of figures which includes the following: -

- The predicted levels from this development based at each noise sensitive location (NSL) at wind speeds up to 12m/s
- The maximum levels based on consented limits from each existing or consented wind farm development at each NSL. If any reduction is made for controlling property or another reason, this should be made clear.
- The predicted levels from each existing or consented wind farm development at each NSL.
- The cumulative levels based on consented and predicted levels at each NSL.

The assessment should also include an outline for a mitigation scheme to be implemented should noise levels from the development be subsequently found to exceed consented levels.

Noise Exposure
When assessing the cumulative impact from more than one wind farm, consideration must be given to any increase in exposure time. Regardless of whether cumulative levels can meet relevant criteria, if a noise sensitive property subsequently becomes affected by wind turbine noise from more than one direction this could result in a significant loss of respite.

Background Noise Measurements
Background noise surveys should be undertaken in accordance with ETSU-R-97 and the Good Practice Guide. It is recommended that monitoring locations be agreed with the Council's Environmental Health Officer however, it is unlikely that they will be able to attend the installation of equipment. Where possible, sites must avoid other noise sources such as boiler flues, wind chimes, squeaking gate, rustling leaves etc. Otherwise, the results may not be valid for any other property.

Difficulties can arise where a location is already subject to noise from an existing wind turbine development. ETSU states that background noise must not include noise from an existing wind farm. The GPG offers advice on how to approach this problem and in some cases, it may be possible to utilise the results from historical background surveys. It is advised that the developer consults the Councils Environmental Health Officer at an early stage to discuss the proposed methodology.

Construction Noise
Planning conditions are not used to control the impact of construction noise as similar powers are available to the Local Authority under Section 60 of the Control of Pollution Act 1974. However, where there is potential for disturbance from construction noise the application will need to include a noise assessment.

A construction noise assessment will be required in the following circumstances: -

- Where it is proposed to undertake work which is audible at the curtilage of any noise sensitive receptor, out with the hours Mon-Fri 8am to 7pm; Sat 8am to 1pm

OR

- Where noise levels during the above periods are likely to exceed 75dB(A) for short term works or 55dB(A) for long term works. Both measurements to be taken as a 1hr LAeq at the curtilage of any noise sensitive receptor. (Generally, long term work is taken to be more than 6 months)

If an assessment is submitted it should 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". Details of any mitigation measures should be provided including proposed hours of operation.

Regardless of whether a construction noise assessment is required, it is expected that the developer/contractor will employ the best practicable means to reduce the impact of noise from construction activities. Attention should be given to construction traffic and the use of tonal reversing alarms.

Private Water Supplies
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.

Dust
Depending on the proximity of the working area to houses etc. the applicant may require to submit a scheme for the suppression of dust during construction. Particular attention should be paid to construction traffic movements.

Key Points	Assessments to be carried out and/or submitted with application
• Noise • Private water supplies • Dust	• Assessment of noise from wind turbines • Assessment of noise from construction activities • Investigation into private water supplies • Assessment of potential of dust nuisance

Organisation	Environmental Health
Name	Robin Fraser
Position	EHO
Email	REDACTED
Phone	REDACTED

A17

Consultee Comments for Planning Application 19/03792/SCOP

Application Summary

Application Number: 19/03792/SCOP

Address: Land 3450M North Of Kintradwell Lodge Brora

Proposal: Kintradwell Wind Farm proposal

Case Officer: Simon Hindson

Consultee Details

Name: . FLOOD RISK MANAGEMENT TEAM

Address: Highland Council Area Office, 84 High Street, Dingwall IV15 9QN
REDACTED

On Behalf Of: D & I Flood Team

Comments

The Flood Risk Management Team has no comment to make on this application

A18

MEMORANDUM

To:	Area Planning Manager, North FAO: Simon Hindson
From:	Transport Planning
Subject:	Kintradwell Wind Farm
Date:	10.09.19
Our ref:	
Your ref:	19/03792/SCOP
Please ask for:	FM

I refer to the drawings and documentation submitted in respect of the above scoping request and would offer the following comments.

Development Proposed
Construction of a wind farm is proposed on the Kintradwell Estate near Brora. The total capacity of the development is unknown at this time, but a generating capacity of over 50 MW is proposed, comprising turbines with a tip height of up to 149.9 m and rotor diameter up to 136 m.

Access, Traffic and Transport
The Port of Entry for turbine components has been identified as Invergordon with a route to site via the A9 trunk road.
The submitted Environmental Impact Assessment Scoping Report includes Chapter 10, Transport and Access which sets out how the transport impacts of the development will be assessed and mitigated.
I am generally satisfied with the scope and methodology for the proposed Transport and Access Assessment and welcome the inclusion of a standalone Transport Assessment as a Technical Appendix. I would, however, note the following points.

- In addition to the proposed route for AIL's, the routes for general construction traffic will require to be identified and reviewed within the TA.
- Early consultation with the Council's Structures Section is recommended with regard to any affected structures on Council maintained roads.
- The attached, Renewable Pre-app. Guidance, document provides guidance on the matters to be addressed by the TA.
- Details of any other committed developments to be considered in the TA should be obtained from the planning service.
- Available traffic data for Council maintained roads can be obtained from the Council.

Section 96 Agreement

Notwithstanding the above requirements, there could remain a risk of damage to Council maintained roads from construction related traffic. In order to protect the interests of the Council, as roads authority, a suitable agreement relating to Section 96 of the Roads (Scotland) Act and appropriate planning legislation may be necessary. An appropriate Road Bond or similar security may also be required.

Useful contacts:

Structures - Norman Smart, Principal Engineer
REDACTED

Traffic Data - Greg Otreba. Senior Technician
REDACTED

A20

Renewable Energy Proposal

Transport Statement/Assessment Methodology for Public Roads for which Highland Council is the Roads Authority

1. Identify all public roads affected by the development. In addition to transportation of all abnormal loads & vehicles (delivery of components) this should also include routes to be used by local suppliers and staff. It is expected that the developer submits a preferred access route for the development. All other access route options should be provided, having been investigated in order to establish their feasibility. This should clearly identify the pros and cons of all the route options and therefore provide a logical selection process to arrive at a preferred route.
2. Establish current condition of the roads. This work which should be undertaken by a consulting engineer acceptable to the Council and will involve an engineering appraisal of the routes including the following:
   - Assessment of structural strength of carriageway including construction depths and road formation where this is likely to be significant in respect of proposed impacts, including non-destructive testing and sampling as required.
   - Road surface condition and profile
   - Assessment of structures and any weight restrictions
   - Road widths, vertical and horizontal alignment and provision of passing places
   - Details of adjacent communities
3. Determine the traffic generation and distribution of the proposals throughout the construction and operation periods to provide accurate data resulting from the proposed development including
   - Nos. of light and heavy vehicles including staff travel
   - Abnormal loads
   - Duration of works
4. Current traffic flows including use by public transport services, school buses, refuse vehicles, commercial users, pedestrians, cyclists and equestrians.
5. Impacts of proposed traffic including
   - Impacts on carriageway, structures, verges etc.
   - Impacts on other road users
   - Impacts on adjacent communities
   - Swept path and gradient analysis where it is envisaged that transportation of traffic could be problematic
   - Provision of Trial Runs to be carried out in order to prove the route is achievable and/or to establish the extent of works required to facilitate transportation
6. Cumulative impacts with other developments in progress and committed developments including other Renewable Energy projects.
7. Proposed mitigation measures to address impacts identified in 5 above, including
   - Carriageway strengthening
   - Strengthening of bridges and culverts
   - Carriageway widening and/or edge strengthening
   - Provision of passing places
   - Road safety measures
   - Traffic management including measures to be taken to ensure that development traffic does not use routes other than the approved routes.
8. Details of residual effects.

The above information is not exhaustive and should be used as a guide to submitting all relevant information in relation to roads, traffic and transportation matters arsing from the development proposals, which should be in the form of a Transport Statement/Assessment forming part of the Environmental Statement submission.

Transport Planning Team
Development & Infrastructure

A21

Consultee Comments for Planning Application 19/03792/SCOP

Application Summary

Application Number: 19/03792/SCOP

Address: Land 3450M North Of Kintradwell Lodge Brora

Proposal: Kintradwell Wind Farm proposal

Case Officer: Simon Hindson

Consultee Details

Name: . FORESTRY TEAM

Address: The Highland Council Headquarters, Glenurquhart Road, Inverness IV3 5NX
REDACTED

On Behalf Of: HQ Forestry

Comments

The proposed wind farm development appears to have no impact on existing woodland. I therefore have no further comment.

Regards

Nick Richards (Forestry Officer)

A22

Consultee Comments for Planning Application 19/03792/SCOP

Application Summary

Application Number: 19/03792/SCOP

Address: Land 3450M North Of Kintradwell Lodge Brora

Proposal: Kintradwell Wind Farm proposal

Case Officer: Simon Hindson

Consultee Details

Name: . ACCESSS OFFICER CAITHNESS AND SUTHERLAND

Address: Drummuie Area Office The Highland Council, Golspie KW10 6TA
REDACTED

On Behalf Of: Access Officer Caithness

Comments

Viewpoints with a recreational type receptor have been proposed for assessment and given there is limited known use of the site red line boundary for recreation uses, I have no further comment to make. Other than that the access track is not detailed in this scoping report and it is likely to be a significant visual impact from some of the viewpoints and it is should considered in the assessment.

A23

By email to: econsents_admin@gov.scot

Mr Stephen McFadden
Energy Consents Unit
4th Floor, 5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Enquiry Line: 0131-668-8716
HMConsultations@hes.scot

Our case ID: 300037515
Your ref: ECU00001927

20 September 2019

Dear Mr McFadden

The Electricity Act 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Kintradwell Wind Farm, The Highlands
Scoping Report

Thank you for your consultation which we received on 20 August 2019 about the above scoping report. We have reviewed the details in terms of our historic environment interests. This covers world heritage sites, scheduled monuments and their settings, category A-listed buildings and their settings, inventory gardens and designed landscapes, inventory battlefields and historic marine protected areas (HMPAs).

The relevant local authority archaeological and cultural heritage advisors will also be able to offer advice on the scope of the cultural heritage assessment. This may include heritage assets not covered by our interests, such as unscheduled archaeology, and category B- and C-listed buildings.

Proposed Development

I understand that the proposed development comprises 22 wind turbines with a maximum height of up to 149.9m. The development is located between an operational wind farm (Gordonbush) and the coast north-east of Brora.

Scope of assessment

We have reviewed the Scoping Report submitted with this consultation. We note the content of Chapter 6: Archaeology and Cultural Heritage and the specific questions in relation to the suitability of the proposed methodology that is to be employed for the assessment of effects on heritage assets. Below, we provide responses to the queries that are relevant to our historic environment interests.

Questions included in paragraph 6.7:
6.7.1 Do you agree with the proposed Study Areas?

We agree with the proposed Outer Study Area extending 10km from the outermost finalised proposed turbine locations that is to be used for the identification of cultural heritage assets whose settings could by affected by the proposed development (including cumulative effects). We are also content that views towards any asset identified as having settings sensitive to change will be considered, even where no visibility is predicted from the asset.

6.7.2 Do you agree that the sources to be employed in the desk-based assessment are sufficient to establish a reliable baseline?

The sources to be employed in the desk-based assessment should be sufficient to establish a reliable baseline for our historic environment interests.

6.7.3 Do you agree that the archaeological potential of the high ground, around the proposed wind turbine development site, is low?

We do not agree that the archaeological potential at a high altitude (above 350m), is necessarily low or negligible. A further explanation of why this is considered to be the case would be required.

6.7.5 Do you agree with the proposed methodology for the assessment of effects on Archaeology and Cultural Heritage interests?

We agree with the proposed methodology for the assessment of effects on our historic environment interests.

6.7.6 Do you agree with the proposed list of visualisations intended to accompany the assessment and the type of visualisation proposed in each case?

The ZTV provided with this consultation is not ‘zoomed-in’ enough to be able to confirm that all scheduled monuments that have potential for significant effects on their setting have been selected as viewpoints in Table 6.4. It should also be noted that even those heritage assets that have no theoretical visibility of the proposed turbines might receive impacts on their setting, as the turbines could feature in important views towards these sites from areas that do lie within the ZTV.

6.7.7 Are there any other heritage assets that you would wish to add to the list of visualisations and why?

We would recommend that the following heritage assets are added to the list: Lothbeg Bridge, long cairn 210m ESE of (SM1808); Carrol, broch 600m SSW of, Loch Brora (SM1846) and Carradh nan Clach, two standing stones (SM1775). In each case, wirelines should be sufficient in the first instance.

Further information

Please note that on 1 May 2019 we adopted the new Historic Environment Policy for Scotland. You can find the full set of policy and guidance, including our 'Managing Change in the Historic Environment' series, online at www.historicenvironment.scot/heps.

Technical advice is available on our Technical Conservation website at http://conservation.historic-scotland.gov.uk/.

We hope this is helpful. Please contact us if you have any questions about this response. The officer managing this case is Urszula Szupszynska REDACTED REDACTED

Yours sincerely

Historic Environment Scotland

A26

SEPA
Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

Our ref: PCS/166401
Your ref: ECU00001882

If telephoning ask for:
Aden McCorkell

19 September 2019

Stephen McFadden
Energy Consents Unit
The Scottish Government
5 Atlantic Quay
150 Broomielaw
4th Floor
Glasgow
G2 8LU

By email only to: Econsents_Admin@gov.scot

Dear Mr McFadden

The Electricity Act 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Scoping Opinion Request– Kintradwell Wind Farm Proposal, The Highlands

Thank you for consulting SEPA on the scoping opinion for the above development proposal by way of your email received on 20 August 2019.

We would encourage the applicant to have early discussions with us or submit a draft Environmental Impact Assessment Report to ensure that the issues within our remit have been fully considered prior to any submission of a final report - particularly in relation to the layout overlaid with peat depth and NVC surveys.

Advice to the planning authority

We consider that the following key issues must be addressed in the Environmental Impact Assessment process. To **avoid delay and potential objection,** the information outlined below and in the attached appendix must be submitted in support of the application.

a) Map and assessment of all engineering activities in or impacting on the water environment including proposed buffers, details of any flood risk assessment and details of any related CAR applications.

b) Map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems and buffers.

c) Peat depth survey and table detailing re-use proposals.

d) Map and site layout of borrow pits.

e) Schedule of mitigation including pollution prevention measures.

f) Borrow Pit Site Management Plan of pollution prevention measures.

g) Map of proposed surface water drainage layout.

h) Decommissioning statement.

Further details on these information requirements and the form in which they must be submitted can be found in the attached appendix. We also provide site specific comments in the following section which can help the developer focus the scope of the assessment.

1. Site specific comments

1.1 We would be fully supportive of any investigations which would seek to compensate for any historical or proposed impacts to the site, and actively seek to add environmental improvements or enhancements.

1.2 We would expect any nearby or existing infrastructure to be considered prior to new infrastructure being proposed (i.e. existing tracks and previously disturbed land), in order to minimise environmental impacts.

1.3 Much of the site is on peat, therefore we would expect the layout to be designed to minimise the disturbance of peat and be supported by a full site specific Peat Management Plan. This should include early discussions regarding the appropriate reuse of excavated peat. Peat depth surveys will be required in in line with the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017).

1.4 We will expect the layout to avoid Ground Water Dependant Terrestrial Ecosystems (GWDTE), which are identified through a National Vegetation Classification (NVC) survey. Please note that the NVC survey should be overlain with all proposed infrastructure to aid in assessment. A map demonstrating that all GWDTE are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m must also be submitted.

1.5 We would expect all turbines and connecting tracks (excluding crossings) to be located at least 50 m from any watercourse (and lochs), watercourse crossings minimised and an approach taken which minimises the overall infrastructure required to support the development. We would expect the proposed access tracks to make use of existing infrastructure and the tracks should be demonstrated to be as short as possible. We are unlikely to support excessive use of spurs for example.

1.6 In the first instance, we expect the location of access tracks to avoid areas of deep peat and minimise their impacts to peat. Such mitigation might include the use of floating tracks over peat exceeding a depth of 1m. Floating tracks would mitigate against impacts on peat as well as the hydrological impacts of any Ground Water Dependent Terrestrial Ecosystems.

1.7 As long as watercourse crossings are designed to accommodate the 1 in 200 year flow and other infrastructure is located well away from watercourses we do not foresee a need for detailed information on flood risk to be provided. All watercourse crossings must be designed as traditional style bridges or bottomless arched culverts.

1.8 If a temporary construction compound is proposed, please refer to SEPA's Guidance on the life extension and decommissioning of onshore wind farms. This contains a hierarchy of environmental impact, for which we would expect any redundant infrastructure to be considered and justified.

1.9 If any battery storage facilities are proposed on site, further information should be provided on the bunding and drainage proposals from the battery storage facilities. Further information on environmental risks associated with battery storage and appropriate mitigation should be detailed within the CEMP or Schedule of Mitigation.

1.10 You may need a Construction Site Licence under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). Please see our regulatory requirements below for further detail.

Regulatory advice for the applicant

2. Regulatory requirements

2.1 Authorisation is required under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) to carry out engineering works in or in the vicinity of inland surface waters (other than groundwater) or wetlands. Inland water means all standing or flowing water on the surface of the land (e.g. rivers, lochs, canals, reservoirs).

2.2 Management of surplus peat or soils may require an exemption under The Waste Management Licensing (Scotland) Regulations 2011.

2.3 A Controlled Activities Regulations (CAR) construction site licence will be required for management of surface water run-off from a construction site, including access tracks, which:

- is more than 4 hectares,
- is in excess of 5km, or
- includes an area of more than 1 hectare or length of more than 500m on ground with a slope in excess of 25˚

See SEPA's Sector Specific Guidance: Construction Sites (WAT-SG-75) for details. Site design may be affected by pollution prevention requirements and hence we strongly encourage the applicant to engage in pre-CAR application discussions with a member of the regulatory services team in your local SEPA office.

2.4 Details of regulatory requirements and good practice advice for the applicant can be found on the Regulations section of our website. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the regulations team in your local SEPA office at: Strathbeg House, Clarence Street, Thurso KW14 7JS. Telephone 01847 894 422.

If you have any queries relating to this letter, please contact me by REDACTED e-mail at planning.dingwall@sepa.org.uk.

Yours sincerely

Aden McCorkell
Planning Officer
Planning Service

ECopy to: Stephen.McFadden@gov.scot

Disclaimer
This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes

required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our website planning pages.

Appendix 1: Detailed scoping requirements

This appendix sets out our scoping information requirements. There may be opportunities to scope out some of the issues below depending on the site. Evidence must be provided in the submission to support why an issue is not relevant for this site in order **to avoid delay and potential objection**.

If there is a delay between scoping and the submission of the application then please refer to our website for our latest information requirements as they are regularly updated; current best practice must be followed.

We would welcome the opportunity to comment on the draft submission. As we can process files of a maximum size of only 25MB the submission must be divided into appropriately named sections of less than 25MB each.

1. Site layout

1.1 All maps must be based on an adequate scale with which to assess the information. This could range from OS 1: 10,000 to a more detailed scale in more sensitive locations. Each of the maps below must detail all proposed upgraded, temporary and permanent site infrastructure. This includes all tracks, excavations, buildings, borrow pits, pipelines, cabling, site compounds, laydown areas, storage areas and any other built elements. Existing built infrastructure must be re-used or upgraded wherever possible. The layout should be designed to minimise the extent of new works on previously undisturbed ground. For example, a layout which makes use of lots of spurs or loops is unlikely to be acceptable. Cabling must be laid in ground already disturbed such as verges. A comparison of the environmental effects of alternative locations of infrastructure elements, such as tracks, may be required.

2. Engineering activities which may have adverse effects on the water environment

2.1 The site layout must be designed to avoid impacts upon the water environment. Where activities such as watercourse crossings, watercourse diversions or other engineering activities in or impacting on the water environment cannot be avoided then the submission must include justification of this and a map showing:

a) All proposed temporary or permanent infrastructure overlain with all lochs and watercourses.

b) A minimum buffer of 50m around each loch or watercourse. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse and drawings of what is proposed in terms of engineering works.

c) Detailed layout of all proposed mitigation including all cut off drains, location, number and size of settlement ponds.

2.2 If water abstractions or dewatering are proposed, a table of volumes and timings of groundwater abstractions and related mitigation measures must be provided.

2.3 Further advice and our best practice guidance are available within the water engineering section of our website. Guidance on the design of water crossings can be found in our Construction of River Crossings Good Practice Guide.

2.4 Refer to Appendix 2 of our Standing Advice for advice on flood risk. Watercourse crossings must be designed to accommodate the 0.5% Annual Exceedance Probability (AEP) flows, or information provided to justify smaller structures. If it is thought that the development

could result in an increased risk of flooding to a nearby receptor then a Flood Risk Assessment must be submitted in support of the planning application. Our Technical flood risk guidance for stakeholders outlines the information we require to be submitted as part of a Flood Risk Assessment. Please also refer to Controlled Activities Regulations (CAR) Flood Risk Standing Advice for Engineering, Discharge and Impoundment Activities.

3. Disturbance and re-use of excavated peat and other carbon rich soils

3.1 Scottish Planning Policy states (Paragraph 205) that "Where peat and other carbon rich soils are present, applicants must assess the likely effects of development on carbon dioxide (CO_2) emissions. Where peatland is drained or otherwise disturbed, there is liable to be a release of CO_2 to the atmosphere. Developments must aim to minimise this release."

3.2 The planning submission must a) demonstrate how the layout has been designed to minimise disturbance of peat and consequential release of CO_2 and b) outline the preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels, cable trenches, or the storage and re-use of excavated peat. There is often less environmental impact from localised temporary storage and reuse rather than movement to large central peat storage areas.

3.3 The submission must include:

a) A detailed map of peat depths (this must be to full depth and follow the survey requirement of the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017)) with all the built elements (including peat storage areas) overlain to demonstrate how the development avoids areas of deep peat and other sensitive receptors such as Groundwater Dependent Terrestrial Ecosystems.

b) A table which details the quantities of acrotelmic, catotelmic and amorphous peat which will be excavated for each element and where it will be re-used during reinstatement. Details of the proposed widths and depths of peat to be re-used and how it will be kept wet permanently must be included.

3.4 To avoid delay and potential objection proposals must be in accordance with Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste and our Developments on Peat and Off-Site uses of Waste Peat.

3.5 Dependent upon the volumes of peat likely to be encountered and the scale of the development, applicants must consider whether a full Peat Management Plan (as detailed in the above guidance) is required or whether the above information would be best submitted as part of the schedule of mitigation.

3.6 Please note we do not validate carbon balance assessments except where requested to by Scottish Government in exceptional circumstances. Our advice on the minimisation of peat disturbance and peatland restoration may need to be taken into account when you consider such assessments.

4. Disruption to Groundwater Dependent Terrestrial Ecosystems (GWDTE)

4.1 GWDTE are protected under the Water Framework Directive and therefore the layout and design of the development must avoid impact on such areas. The following information must be included in the submission:

a) A map demonstrating that all GWDTE are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the

distances require it.

b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all GWDTE affected.

4.2 Please refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems for further advice and the minimum information we require to be submitted.

5. Existing groundwater abstractions

5.1 Excavations and other construction works can disrupt groundwater flow and impact on existing groundwater abstractions. The submission must include:

a) A map demonstrating that all existing groundwater abstractions are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it.

b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all existing groundwater abstractions affected.

5.2 Please refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems for further advice on the minimum information we require to be submitted.

6. Forest removal and forest waste

6.1 Key holing must be used wherever possible as large scale felling can result in large amounts of waste material and in a peak release of nutrients which can affect local water quality. The supporting information should refer to the current Forest Plan if one exists and measures should comply with the Plan where possible.

6.2 Clear felling may be acceptable only in cases where planting took place on deep peat and it is proposed through a Habitat Management Plan to reinstate peat-forming habitats. The submission must include:

a) A map demarcating the areas to be subject to different felling techniques.

b) Photography of general timber condition in each of these areas.

c) A table of approximate volumes of timber which will be removed from site and volumes, sizes of chips or brash and depths that will be re-used on site.

d) A plan showing how and where any timber residues will be re-used for ecological benefit within that area, supported by a Habitat Management Plan. Further guidance on this can be found in Use of Trees Cleared to Facilitate Development on Afforested Land – Joint Guidance from SEPA, SNH and FCS.

7. Borrow pits

7.1 Scottish Planning Policy states (Paragraph 243) that “Borrow pits should only be permitted if there are significant environmental or economic benefits compared to obtaining material from local quarries, they are time-limited; tied to a particular project and appropriate reclamation measures are in place.” The submission must provide sufficient information to

address this policy statement.

7.2 In accordance with Paragraphs 52 to 57 of Planning Advice Note 50 Controlling the Environmental Effects of Surface Mineral Workings (PAN 50) a Site Management Plan should be submitted in support of any application. The following information should also be submitted for each borrow pit:

a) A map showing the location, size, depths and dimensions.

b) A map showing any stocks of rock, overburden, soils and temporary and permanent infrastructure including tracks, buildings, oil storage, pipes and drainage, overlain with all lochs and watercourses to a distance of 250 metres. You need to demonstrate that a site specific proportionate buffer can be achieved. On this map, a site-specific buffer must be drawn around each loch or watercourse proportionate to the depth of excavations and at least 10m from access tracks. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse, drawings of what is proposed in terms of engineering works.

c) You need to provide a justification for the proposed location of borrow pits and evidence of the suitability of the material to be excavated for the proposed use, including any risk of pollution caused by degradation of the rock.

d) A ground investigation report giving existing seasonally highest water table including sections showing the maximum area, depth and profile of working in relation to the water table.

e) A site map showing cut-off drains, silt management devices and settlement lagoons to manage surface water and dewatering discharge. Cut-off drains must be installed to maximise diversion of water from entering quarry works.

f) A site map showing proposed water abstractions with details of the volumes and timings of abstractions.

g) A site map showing the location of pollution prevention measures such as spill kits, oil interceptors, drainage associated with welfare facilities, recycling and bin storage and vehicle washing areas. The drawing notes should include a commitment to check these daily.

h) A site map showing where soils and overburden will be stored including details of the heights and dimensions of each store, how long the material will be stored for and how soils will be kept fit for restoration purposes. Where the development will result in the disturbance of peat or other carbon rich soils then the submission must also include a detailed map of peat depths (this must be to full depth and follow the survey requirement of the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017)) with all the built elements and excavation areas overlain so it can clearly be seen how the development minimises disturbance of peat and the consequential release of CO_2.

i) Sections and plans detailing how restoration will be progressed including the phasing, profiles, depths and types of material to be used.

j) Details of how the rock will be processed in order to produce a grade of rock that will not cause siltation problems during its end use on tracks, trenches and other hardstanding.

8. Pollution prevention and environmental management

8.1 One of our key interests in relation to developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. A schedule of mitigation supported by the above site specific maps and plans must be submitted. These must include reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils at any one time) and regulatory requirements. They should set out the daily responsibilities of ECOWs, how site inspections will be recorded and acted upon and proposals for a planning monitoring enforcement officer. Please refer to Guidance for Pollution Prevention (GPPs).

9. Life extension, repowering and decommissioning

9.1 Proposals for life extension, repowering and/or decommissioning must demonstrate accordance with SEPA Guidance on the life extension and decommissioning of onshore wind farms. Table 1 of the guidance provides a hierarchical framework of environmental impact based upon the principles of sustainable resource use, effective mitigation of environmental risk (including climate change) and optimisation of long term ecological restoration. The submission must demonstrate how the hierarchy of environmental impact has been applied, within the context of latest knowledge and best practice, including justification for not selecting lower impact options when life extension is not proposed.

9.2 The submission needs to demonstrate that there will be no discarding of materials that are likely to be classified as waste as any such proposals would be unacceptable under waste management licensing. Further guidance on this may be found in the document Is it waste - Understanding the definition of waste.

A35

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
nature.scot

Mr Stephen McFadden
Energy Consents Unit
The Scottish Government
By Email - Econsents_Admin@gov.scot

12 September 2019
Your ref: ECU 0000 1927
Our Ref: CEA 156599

Dear Mr McFadden

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Proposed wind farm development, comprising 22 turbines of up to 150m to tip height on Kintradwell Estate, Brora, Sutherland.

Thank you for your letter dated 20 August 2019, requesting our comments on this scoping opinion.

1. Background
We have not had the opportunity to provide pre-application comments on this proposal, other than bat survey requirements.

2. Summary
The key issues that should be addressed in the Environmental Impact Assessment (EIA) are as follows;

- The potential impacts to the Caithness & Sutherland Peatlands Special Protection Area (SPA), the Dornoch Firth & Loch Fleet SPA and The Moray Firth Special Area of Conservation (SAC) & proposed SPA (pSPA).
- Impacts to wider countryside upland birds (e.g. golden eagle and golden plover, etc.) and carbon rich soils
- Protected species and deer

3. Our comments on Scoping
3.1 Protected Areas
This proposal is approximately 3.8km from a component part of the Caithness & Sutherland Peatlands SPA, protected for its upland birds. It is also within connectivity distance (16.3km) to the Dornoch Firth & Loch Fleet SPA, protected for non-breeding waterfowl, such as greylag geese.

In addition, this proposal is hydrologically connected to the Moray Firth Special Area of Conservation (SAC), protected for its sub-tidal sandbanks and bottle nosed dolphin. The Moray Firth pSPA is protected for its range of inshore marine waterfowl.

a) *Caithness & Sutherland Peatlands SPA & Ramsar Site*
Although the chances of divers linked to this SPA flying through this development to the sea may seem slim, this aspect should still be fully assessed and presented within the EIA

Report. VP survey work should be undertaken at a time of day which will maximise flight data.

Bird survey results should help to gauge whether there will be any impact to SPA merlin. Breeding season vantage point work should suffice in assessing the level of impact on any summer greylag geese that may have connections with this Ramsar Site.

If appropriate, assessments should be carried out under the Conservation Objectives of this SPA (e.g. see https://apps.snh.gov.uk/sitelink-api/v1/sites/8476/documents/29). It is unlikely that golden eagles at this site will be linked to this SPA and therefore they may be considered in context to the Natural Heritage Zone population.

b) *Dornoch Firth & Loch Fleet SPA & Ramsar Site*
As this development is within connectivity distance of this protected area for greylag geese, detailed assessment will be required to gauge if the wind farm is likely to have adverse impacts. We note that this proposal has already recorded levels of flight activity, probably from Icelandic birds migrating through the development in the spring and autumn. Therefore, we advise that a Habitats Regulation Appraisal should be completed for greylag.

Assessments should be carried out with the Conservation Objectives of this SPA (e.g. see https://apps.snh.gov.uk/sitelink-api/v1/sites/8490/documents/29).

c) Moray Firth SAC & pSPA
As both of these protected areas are connected to the development site, through streams and burns flowing into the sea, we recommend that the impacts of this proposal are considered in context to these protected areas. Therefore, we recommend that it would be more appropriate to scope in HRAs for both sites, even if impacts can be controlled through best practice construction techniques (e.g. pollution control, etc.). Moray Firth pSPA was not identified within the Scoping Report.

3.2 Carbon rich soils, deep peat and priority peatland habitat
The Scoping Report appears to be light on the important aspects of peatland habitat. The proposed development boundary includes areas of carbon rich soils, deep peat and priority peatland habitat including areas identified as class 1 and 2 on the Carbon and Peatland Map (2016) available from http://map.environment.gov.scot/Soil_maps/?layer=10

Class 1 and 2 peatland areas are likely to have high conservation value. These areas are afforded significant protection under Scottish Planning Policy (SPP). The EIA Report will need to address, in detail, how a wind farm can be constructed without compromising this national interest. Opportunities to mitigate impacts through siting, design and other measures should be fully considered. This may also include options for significant habitat restoration to mitigate any loss and damage to this peatland interest, if appropriate.

Guidance on *nationally important peatland*, and other related issues can be found on our website, see; https://www.nature.scot/professional-advice/planning-and-development/renewable-energy-development/types-renewable-technologies/onshore-wind-energy/general-advice-wind-farm.

3.3 Upland birds and survey methods
This wind farm has the potential to impact upland birds (e.g. golden eagle & golden plover). Therefore, this should be fully assessed within the EIA Report, including the potential for displacement and/or collision risk.

Birds not connected to a protected area should be assessed against the relative Natural Heritage Zone populations, see; https://www.nature.scot/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected.

As such a high level of golden eagle activity occurs within the development site, we recommend extra effort is undertaken to fully appreciate the importance of the development site for this species. We recommend that modelling is carried out to show which areas of the site boundary have high value for eagles. This, along with vantage point data and information on eyrie locations, should help to inform whether there is a wind farm layout within the estate boundary which will allow the golden eagle territory to be retained.

In relation to potential construction disturbance distances for golden eagle, please see; *Implications of Additional Protection for Golden Eagle under Schedules A1 & 1A of the Wildlife and Countryside Act (1981).* Roosting disturbance, even outwith the breeding season, will need to be considered within the EIA Report, see; https://www.nature.scot/implications-additional-protection-hen-harrier-red-kite-and-golden-eagle-under-schedules-a1-1a.

To fully assess the environmental impacts of this proposal through the EIA process, we recommend that the entire development receives adequate survey effort, as outlined in what is now considered to be best practice bird survey guidance, see; https://www.nature.scot/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms.

We note the Scoping Report highlights that two years of bird survey work will be considered complete after August 2019. In this context, we are disappointed to note that 23% of the proposed development has not received any bird survey vantage point work. This is especially an issue for golden eagle and as a result it is likely to underestimate the level of impact for this iconic species.

We regularly provide developers with helpful pre-application comments on the scope of bird survey work for wind farm developments in advance of work starting, but we have received no requests for this development. Rather than completing an additional two years of bird survey work, another option open for consideration is to remove turbines 18, 19, 20, 21 & 22 from the wind farm layout. In this regard, it may be prudent for the developer to ask ECU whether this scheme would still warrant being included as a Section 36 application, if these turbines were to be removed.

3.4 Protected species and deer

The hill ground running parallel to the east coast of Sutherland appears to support a healthy population of reptiles (e.g. adders), therefore significant effects are likely. We recommend that survey work is undertaken to gauge any impacts from this proposal, see; https://www.nature.scot/species-planning-advice-reptiles.

The mammal species being considered appears satisfactory. We are aware that badgers are present within this upland landscape. For information on survey methods, species protection plans and licencing please see our website: https://www.nature.scot/professional-advice/planning-and-development/natural-heritage-advice-planners-and-developers/planning-and-development-protected-animals.

We recommend that a Deer Assessment is included within the EIA Report. This will help show whether there will be any effect on the local deer population from construction works,

etc. For more information, see: https://www.nature.scot/guidance-planning-and-development-what-consider-and-include-deer-assessment-and-management.

3.5 Landscape

We are not able to comment on the landscape and visual impacts of this proposal. We are currently providing detailed landscape and visual advice in only the highest priority circumstances, where the effects of proposals approach or surpass levels that raise issues of national interest. However, we have guidance on assessing the landscape and visual impacts of wind farms, which can be used to inform the effects of this proposal, see: https://www.nature.scot/professional-advice/planning-and-development/advice-planners-and-developers/renewable-energy-development/onshore-wind-energy/wind-farm-impacts.

4. Concluding comments

We have produced some useful generic pre-application/scoping advice which can be found on our website, see; https://www.nature.scot/sites/default/files/2018-02/SNH%20General%20pre-application%20and%20scoping%20advice%20%20to%20developers%20of%20onshore%20wind%20farms.pdf

Let me know if you need any further information from us on this proposal.

Yours sincerely

David Patterson
Operations Officer
Northern Isles & North Highland
REDACTED

A39

From: Kirsteen MacDonald, Aberdeen International Airport Limited
To: Stephen McFadden, Energy Consents Unit
Date: 23 August 2019

RE: Kintradwell Wind Farm proposal - scoping consultation

This proposal is located outwith our consultation zone. As such we have no comment to make and need not be consulted further.

Kind regards

Kirsteen

Kirsteen MacDonald
Safeguarding Manager

Aberdeen International Airport

Aberdeen International Airport
Dyce, Aberdeen AB21 7DU

w: aberdeenairport.com t: twitter.com/abz_airport

A40

From: Brora Community Council
To: Energy Consents Unit
Date: 02 October 2019

Subject: Kintradwell Wind farm Application

Dear Sirs

Brora Community Council considers that the amenity of residents and visitors will be adversely affected by the proposed development.

Our area hosts two large wind farms at Kilbraur, commissioned in 2008 and extended in 2011, and Gordonbush commissioned in 2012 with an extension currently in the planning system. Both these developments are quite discreetly sited and set back from the coastal hills and the community. Over a decade they have provided our Community Council with extensive experience of the planning, construction and operation of energy developments. We also have two Beatrice Demonstrator offshore turbines (170m overall height) in the Moray Firth to the north of Brora. Although the turbines are approximately 45m from Brora, they are distinctly visible in clear conditions, particularly low angle winter light. As a community we are also fully aware of the Beatrice off-shore development - (200m overall height).

Brora Community Council do not oppose wind energy developments as a matter of course, only when we feel they are inappropriately sited and as a result will have an adverse effect on our scenic area and the best interests of the community.

The distinct coastal ridge that marks the northern boundary of our council area is a distinguishing feature of the East Sutherland coastline. It is visible as far south as Tain and Portmahomack and beckons the northern traveller from many vantage points on the A9 and the coastal towns and villages. It forms the northern backdrop to our village, our beach, our golf course, our coastal walks and all the northern outlying crofting settlements. In many instances providing uncluttered views across water. The coastal hills are an essential and distinctive part of our visual amenity and for many, the scenic glory of Brora.

East Sutherland is served by the main A9 trunk road which is also a key tourist route. Owing to the topography, one of the features of this main arterial road is that there are few, if any, diversions, loop roads or alternatives in case of road closures or accidents. The road structure is already fragile and often struggles on a daily basis to cope with the current level of traffic.

The proposed development will dominate the coastal hill ridge that forms the northern backdrop to our community. The development will be fully visible above the ridge line and will dominate the northern view for many residents and the forward view for travellers on the A9.

Experience from the two existing wind farm developments in our area has taught us a great deal. Promises of local employment and economic opportunity do not materialise. We attended the Public Enquiry into the West Garty Wind Farm application and found them to be ill-prepared and unprofessional. Likewise RES Scoping Report has misleading distances and very poor map quality - the names of the hills etc being very difficult to read which thus makes map reading difficult.

With regards

Lee Bright
Secretary
Brora Community Council

A41

From: Neil Wright obo Brora District Salmon Fishery Board
To: Stephen McFadden, Energy Consents Unit
Date: 23 September 2019

Kintradwell Wind Farm proposal - scoping consultation

Dear Stephen,

Further to our telephone conversation, we do not believe that migratory fish can get past the waterfall on the Loth River. This obstacle is listed on the Marine Scotland NMPI Map under 'obstacles to Fish Passage' – the impassable falls are listed as being at EASTING 294570 NORTHING 910760.

On the assumption that the falls are impassable the project is unlikely to impact migratory salmon or sea trout, unless substrate is disturbed up stream or pollutants enter the watercourse which would then travel downstream and affect the migratory fish below the falls. During the development the developer should follow SEPAs guidance on watercourses.

Should you need any further information please do not hesitate to let me know.

Kind regards

Neil

Neil Wright MA (Hons) MRICS
RICS Registered Valuer
For Galbraith | Reay House, 17 Old Edinburgh Road, Inverness, IV2 3HF

A42

From: BT
To: Stephen McFadden, Energy Consents Unit
Date: 21 August 2019

RE: Kintradwell Wind Farm proposal - scoping consultation

OUR REF; WID11049

Dear Sir/Madam

Thank you for your email dated 20/08/2019.

We have studied this Windfarm proposal with respect to EMC and related problems to BT point-to-point microwave radio links.

The conclusion is that, the Project indicated should not cause interference to BT's current and presently planned radio network.

Kind Regards,
Paul Atkinson
Fibre and Network Delivery
Radio Frequency Allocation & Network Protection (BNJ112)
Openreach
Web: www.openreach.co.uk
PLEASE ALWAYS RESPOND TO radionetworkprotection@bt.com

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A43

Defence Infrastructure Organisation

Jill Roberts
Assistant Safeguarding Manager
Ministry of Defence
Safeguarding Department
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

REDACTED

Your Reference: ECU00001927

Our Reference: DIO 10035714

Stephen McFadden
Energy Consents Unit
Scottish Government
4th Floor
5 Atlantic Quay
1520 Broomielaw
Scotland
G2 8LU

11/09/19

Dear Stephen

Please quote in any correspondence: DIO 10035714

Site Name: Kintradwell Wind Farm

Planning Application Number: ECU00001927

Site Address: Kintradwell Estate

Thank you for consulting the Ministry of Defence (MOD) on the Scoping Opinion Request in respect of the Kintradwell Wind Farm Proposal received in this office on 20th August 2019.

The MOD has assessed the application using the grid references detailed in annex A below for 22 turbines, a maximum of 149.9 metres to blade tip, and has identified the following:

Air Traffic Control (ATC) Radar

The turbines will be 52.8 km from, detectable by, and will cause unacceptable interference to the ATC radar used by RAF Lossiemouth.

Wind turbines have been shown to have detrimental effects on the performance of Primary Surveillance Radars. These effects include the desensitisation of radar in the vicinity of the turbines, and the creation of "unwanted" aircraft returns which air traffic controllers must treat as aircraft returns. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to air traffic controllers. Controllers use the radar to separate and sequence both military and civilian aircraft, and in busy uncontrolled airspace radar is the only sure way to do this safely. Maintaining situational awareness of all aircraft movements within the airspace is crucial to achieving a safe and efficient air traffic service, and the integrity of radar data is central to this process. The creation of "unwanted" returns displayed on the radar leads to increased workload for both controllers and aircrews and may have a significant operational impact. Furthermore, real aircraft returns can be obscured by a

turbine's radar return, making the tracking of both conflicting unknown aircraft and the controllers' own traffic much more difficult.

An operational assessment of this proposal has been conducted by an ATC subject Matter Expert (SME) who considered the position of the turbines weighed against a number of operational factors. Close examination of the proposal has indicated that the proposed turbines would have a significant and detrimental effect on operations and on the provision of air traffic services at RAF Lossiemouth. MOD therefore has concerns with the development at Kintradwell Estate. The reasons for these concerns include, but are not limited to:

i. Restrictions the development would impose upon LARS/ZONE traffic patterns
ii. Restrictions the development would impose upon special tasks conducted by the Unit
iii. Restrictions the development would impose upon operating areas
iv. The position of the development in relation to restricted/danger areas
v. The position of the development in relation to high ground/sensitive areas
vi. The MOD's future airspace and operational requirements
vii. The frequency of the provision of Traffic Service and Deconfliction Service in the vicinity of the proposed windfarm
viii. Existing clutter or windfarms in the vicinity of the proposed windfarm
ix. The type and characteristics of aircraft routinely using the airspace in the vicinity of the proposed windfarm
x. The performance of the radar
xi. The complexity of the ATC task
xii. Air Traffic Services provided by RAF Lossiemouth controllers to RAF Lossiemouth aircraft

Research into technical solutions is currently ongoing and the developer may wish to consider investigating suitable mitigation solutions.

If the developer is able to overcome the issues stated above, the MOD will request that the cardinal turbines are fitted with MOD accredited 25 candela omni-directional red lighting and infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point. The remainder of the perimeter turbines should be fitted with 25 candela omni-directional red lighting or infrared lighting to the same specification.

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. Further information about the effects of wind turbines on MOD interests can be obtained from the following website:

***MOD*:** https://www.gov.uk/government/publications/wind-farms-ministry-of-defence-safeguarding

Yours sincerely

REDACTED

Jill Roberts
Assistant Safeguarding Manager

Annex A

Turbine	Easting	Northing
1	289,208	910,633
2	288,938	910,928
3	288,763	911,298
4	288,792	911,750
5	288,926	912,202
6	290,914	911,263
7	291,131	911,920
8	290,994	912,404
9	290,330	911,472
10	290,678	911,831
11	289,809	911,771
12	290,298	911,987
13	289,409	912,107
14	289,854	912,297
15	289,587	912,590
16	290,160	912,779
17	289,834	913,014
18	288,848	912,618
19	288,681	913,061
20	288,413	913,490
21	289,045	913,733
22	289,497	913,806

A46

From: Edinburgh Airport (Safeguarding)
To: Energy Consents Unit
Date: 28 August 2019

ECU00001927

In respect of the above, I can confirm the location of this development falls out with our Aerodrome Safeguarding zone therefore we have no objection/comment on this proposal.

With best regards,
Claire

Claire Brown | Safeguarding & Compliance Officer

Edinburgh Airport
Where Scotland meets the world

Edge | Empower | Expertise | Energy | Execute | External focus

Edinburgh Airport Limited
Airside Operations
Fire Station
Edinburgh
EH12 9DN Scotland

A47

From: Kirsteen MacDonald, Glasgow Airport Limited
To: Stephen McFadden, Energy Consents Unit
Date: 23 August 2019

RE: Kintradwell Wind Farm proposal - scoping consultation

This proposal is located outwith our consultation zone. As such we have no comment to make and need not be consulted further.

Kind regards

Kirsteen

Kirsteen MacDonald
Safeguarding Manager

Glasgow Airport Limited, Erskine Court, St Andrews Drive, Paisley PA3 2TJ

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A48

From: Glasgow Prestwick Airport Ltd
To: Energy Consents Unit
Date: 18 September 2019

RE: Kintradwell Wind Farm proposal - scoping consultation

This development lies outside the safeguarding zone for Glasgow Prestwick Airport (GPA) Ltd – and consequently GPA has no objection to this proposed development.

With Kind Regards

Steve Thomson

Steve Thomson
Manager Air Traffic Services
Glasgow Prestwick Airport Ltd.

Glasgow Prestwick Airport Ltd.
Aviation House
Prestwick
KA9 2PL
Scotland
United Kingdom

www.glasgowprestwick.com

A49

From: Highland & Islands Airports Limited (Safeguarding)
To: Stephen McFadden, Energy Consents Unit
Date: 26 September 2019

RE: Kintradwell Wind Farm proposal - scoping consultation

Your Ref: ECU00001927
HIAL Ref: 2019/0104/INV

Dear Sir/Madam,

PROPOSAL: THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017 SCOPING OPINION REQUEST– KINTRADWELL WIND FARM PROPOSAL

LOCATION: Approx 9m North of Brora, Highlands

This development is currently indicative in regards to turbine height and site layout. The assessment is only applicable when utilising a turbine height of 149.9m and the indicative turbine locations. HIAL would require to be consulted and provided with the opportunity to comment further, once these aspects of the development are confirmed.

With reference to the above proposed development, it is confirmed that our calculations show that, at the given position and height, this development would not infringe the safeguarding surfaces for Inverness and Wick Airports.

Therefore, Highlands and Islands Airports Limited would have no objections to the proposal.

Regards,

Safeguarding Team
Highlands and Islands Airports Limited
Head Office, Inverness Airport, Inverness IV2 7JB

✉ safeguarding@hial.co.uk 🌐 www.hial.co.uk

A50

From: JRC Windfarm Coordinations
To: Stephen McFadden, Energy Consents Unit
Date: 21 August 2019

Kintradwell Wind Farm proposal - scoping consultation [WF685292]

Dear Stephen,

A Windfarms Team member has replied to your coordination request, reference **WF685292** with the following response:

Dear Stephen,

Planning Ref**: **ECU00001927

***Name/Location**: KINTRADWELL WIND FARM (Scoping)*

***Site Centre/Turbine at NGR/IGR**:*

T1 - 289208 910633
T2 - 288938 910928
T3 - 288763 911298
T4 - 288792 911750
T5 - 288926 912202
T6 - 290914 911263
T7 - 291131 911920
T8 - 290994 912404
T9 - 290330 911472
T10 - 290678 911831
T11 - 289809 911771
T12 - 290298 911987
T13 - 289409 912107
T14 - 289854 912297
T15 - 289587 912590
T16 - 290160 912779
T17 - 289834 913014
T18 - 288848 912618
T19 - 288681 913061
T20 - 288413 913490
T21 - 289045 913733
T22 - 289497 913806

***Development Radius**:*

***Hub Height**: m **Rotor Radius**: m*

*This proposal **cleared** with respect to radio link infrastructure operated by **The local utility and Scotia Gas Networks***

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry.

This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, developers are advised to seek re-coordination prior to considering any design changes.

Regards

Wind Farm Team

The Joint Radio Company Limited
Delta House
175-177 Borough High Street
LONDON
SE1 1HR
United Kingdom

REDACTED

JRC Ltd. is a Joint Venture between the Energy Networks Association (on behalf of the UK Energy Industries) and National Grid.
Registered in England & Wales: 2990041
http://www.jrc.co.uk/about-us

8 September 2019

Energy Consents Unit
5 Atlantic Quay
150 Bromielaw
Glasgow
G2 8LU

By email: Econsents_Admin@gov.scot

Dear Sir / Madam,

Proposed Kintradwell Wind Farm, Brora, Sutherland
Reference Number: ECU00001927
Response to Scoping Report

Loth Residents are a constituted independent group of local residents formed in 2012, principally to oppose the development of a wind farm at West Garty, a Section 36 application which was refused on 19 October 2018, following a local public inquiry. The proposed Kintradwell site is approximately 5 km south of the West Garty site on the same chain of hills, in a very similar position in relation to the coast and within the same Special Landscape Area (SLA). Our group's fundamental purpose is to protect the northerly portion of the Loch Fleet, Loch Brora and Glen Loth SLA and the distinctive local coastal landscape. The group represents over 400 residents covering the settlements of Brora and Helmsdale, their associated outlying rural areas and a number of concerned regular repeat visitors.

We have now studied the Scoping Report recently submitted. We note that the scheme is for up to 22 turbines with a maximum tip height 149.5 m (Applicant's Figure 1.2 Indicative Turbine Layout – attached) and make the following observations on the questions and information it contains. The topics are covered in the same order as they are covered in the report.

Indicative Turbine Layout

We note in Figure 1.2 that co-ordinates are given for each turbine position. In view of the nature of the terrain and the consequent variation in the turbine base levels, we also recommend and request particularly that the AOD levels for each turbine base should be included in the EIA information and on the Turbine Lay-out Map. We note that this is a requirement of The Highland Council Visualisation Standards (2.18)

Turbine Site Access

The only mention of site access that we can find is at (1.1.4), a passing reference only, giving no indication of how or where the turbine site will be accessed. We request that the EIA should include full details of the options under consideration. Approaches from the A9 in the east or the Gordonbush wind farm at the west end of the site will both be challenging.

We therefore request and emphasise that full details of how access will be achieved will be submitted with detailed maps, engineering drawings and visualisations which include the visual effects particularly in views from Brora. Our community understand only too well the effects of such tracks on our hills, and very long and often incomplete post-construction grow-back. It is therefore vital that full account is taken of the amount of stripping, cut & fill, the total land-take and the likely finished effect of verges and batters in all visualisations and landscape and visual impact assessments.

Landscape & Visual / Cumulative Assessment

The proposed study area of 20 km seems very limited for cumulative assessment in this area which is characterised by very long-range coastal views. The limit of 20 km also conveniently allows the applicant not to take account of Beatrice and the Moray East and West off-shore schemes which are either constructed or approved in the Moray Firth. At least 40 km should be considered in view of the scale of the off-shore developments.

In terms of on-shore developments there is the Navidale proposal for 5 turbines at the Ord, which is currently the subject of an appeal, and a S36 scoping proposal for the Lairg Wind Farm Extension and the South Kilbraur Wind Farm proposal all of which may have been decided or have become applications before the EIA is complete.

We note at 5.3.10 that the applicant intends to include operational, under-construction, consented wind farms and also those subject to a full planning application. We also feel that it would be useful for decision makers and all concerned to include a version of the map which clearly shows the existing pattern of wind farm development in this part of Sutherland, and for completeness, also applications in the area which have been refused.

Landscape & Visual / ZTVs

We hope that the colour choices in the ZTV and Viewpoint Map submitted with the Scoping Report will not be repeated in the application. It is counter-intuitive and unhelpful to select pale colours for the areas of greatest visibility and the more intense colour for areas of least visibility. We would refer the applicant to the ZTVs produced by Muirden for the near-by West Garty application for suitable colour representation. It is also essential to ensure that the map beneath is much more legible in printed form than currently in the applicant's Figures 5.1-5.3.

Landscape & Visual / Viewpoints

We feel that fifteen is a rather low number of viewpoints for a proposal in such a sensitive location within an SLA with cumulative implications. It is also recommended that the applicant should consult Brora Community Council before a final list of viewpoints is determined. (See Base Standards (2.1), The Highland Council Visualisation Standards.)

In the viewpoint selection the applicant appears to be focusing on viewpoints which are suitable for cumulative comparison with existing wind farms at the expense of views in the north-easterly quarter.

We would therefore request that the following points to the north of the project are included:

1. Kinbrace / B871 Syre road.
2. A897 Strath road / around Kildonan Station
3. Summit of Morven
4. Summit of Scaraben

To the south of the project the following further points should be added:

5. Brora Golf Course/Main Beach
6. Glen Loth Road travelling south
7. A9/ Poles – Dornoch
8. Embo
9. Tain
10. Struie Viewpoint / B9176

Landscape & Visual / Visualisations

We would like to highlight the importance of good base photography in line with points 2.11 to 2.13 in The Highland Council Visualisation Standards.

In response to the questions posed at 5.7.1 concerning the provision of monochrome images with turbines in red with blade sweeps when a development is partially screened by landform. They are also particularly relevant in instances where there is a high variation in base levels owing to the terrain. The proposal has both these characteristics. Although it is for The Highland Council to answer this query, it seems clear to us that monochrome images will be particularly important in views from lower levels and around Brora where a large number of blades and turbine parts are likely to be visible. The blade sweeps in such instances also help to provide a sense of the extent and anticipated collective motion of the development. In addition, the use of monochrome analysis images with coloured turbines as an easy means of differentiating between developments in images of Kintradwell and Gordonbush wind farms would be appreciated.

The second question refers to 4.12 in the Visualisation Standards which states, that in instances where there is more than one development, any existing development should be removed and re-montaged correctly orientated into the images. We are aware that there is a marked variance between the photographic representation of wind turbines in situ and those which are montaged into the scene. It results from the difference between the acuity of human vision and the limitations of photography to fully represent what we see. We have seen visualisations where existing turbines have been so faint and disorientated next to the montaged proposal that it creates a somewhat ridiculous and misleading impression - it is not just orientation that is behind this requirement. So, it is our view that the THC requirement should be followed, even if the existing turbines are conveniently orientated, so that cumulative impact with Gordonbush, in particular, can be properly assessed by all parties.

Landscape & Visual / Residential Amenity

We do not agree that Residential Amenity should be simply rolled into the general LVIA. There is an extensive rural community living in Achrimsdale, Greenhill, Dalchalm, East Clyne and Clynelish to the north of Brora whose residential amenity may be considerably affected. Therefore, this subject should be properly considered with representative visualisations or single frame wireframes which are cheap and easy to produce.

Archaeology & Cultural Heritage

In response to the question at 6.7.7. we would add to the list of proposed visualisation viewpoints (6.4) - Cinn-Trolla Broch at Kintradwell.

Ornithology

The on-going Ornithological Activity would indicate that the site is rich in protected avian species, possibly refugees from the nearby Gordonbush site. The negative effects of this wind farm is recognised in the 2016 RSPB Golden Plover Study which was carried out over a five year period. In ornithological terms this proposal is in very sensitive territory and will inevitably have a dramatic impact on the safe margin habitat to the east of the Gordonbush site. Surveys should be thorough and estimates and conclusions should take full account of the experience on and the data from the neighbouring wind farm site.

The general area of the peatlands contains many protected birds. These are part and parcel of landowner responsibilities under the new Agriculture Environment and Climate Scheme (AECS). The proposed World Heritage UNESCO site of the peatlands, covering 2,000 km^2 (0.5 million acres), borders the area of the proposed wind farm. Species mentioned for special attention include curlew, lapwing, oystercatcher, redshank, and snipe. In the 2008 Breeding Bird Assemblage survey, which found the area to be in good ornithological condition, the following species were also identified: red throated diver, golden eagle, merlin, ring ouzel, stonechat and raven. In addition, more recently, there is a drive to protect the hen harrier and the latest reintroduced species, sea eagle. All of these species are found on neighbouring land and in habitat similar to the site of the proposed wind farm. It must therefore be the site for many protected and rare birds.

Peatland Habitat

Loth Residents have noted that the area where the turbines are proposed is Class 1 – Priority Peatland Habitat which attracts significant protection. The turbine site and any proposed access routes must be fully surveyed for peat depths and the applicant will need to demonstrate convincingly how their proposed development can be achieved without compromising a Class 1 Peatland Habitat.

Socio economic, Recreation & Tourism

We do not agree that Socio-economic, Recreation & Tourism aspects do not warrant a chapter in the EIA. Tourism, sporting visitors and recreational field sports are a long-established and very vital part of our local economy and the majority of the area's regular visitors are particularly sensitive receptors. Over the last few years the North Coast 500 route has led to a significant increase in touring visitors and a much longer season.

The West Garty Wind Farm EIA and enquiry sessions included extensive coverage of these important topics and Loth Residents believe that they should be similarly covered in the Kintradwell Wind Farm EIA.

Planning History

Given the significant number of attempts made by developers to construct large wind farms on the coastal hills of East Sutherland in the last over 2 decades, we ask that a section is included in the EIA on this matter.

Summary

The Kintradwell Wind Farm is proposed in a particularly sensitive scenic area, within a Special Landscape Area, in a Class 1 Peatland Habitat in an area of well-known ornithological interest. The selection of viewpoints will play an important role in providing a balanced LVIA and good quality visualisations will be vital in properly informing decision makers and local people. We therefore hope that you will take our views into account when advising the applicant.

Yours faithfully,

For Loth Residents

Copies (by email):

Simon Hindson
Development & Infrastructure Service
The Highland Council
Glenurquhart Road
Inverness IV3 5NX
REDACTED

David Patterson
Scottish Natural Heritage
The Links
Golspie KW10 6UB

Lee Bright
Brora Community Council
Brora

A57

marinescotland

Scottish Government
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REDACTED

Mr Stephen McFadden
Energy Consents Unit
Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Our ref: FL/19-7

August 28th 2019

Dear Stephen,

KINTRADWELL WIND FARM, HIGHLANDS

Thank you for seeking comment from Marine Scotland Science (MSS) on the scoping report for the proposed Kintradwell wind farm in relation to freshwater and diadromous fish and fisheries.

Watercourses within and downstream of the proposed development area support both salmon and trout populations and therefore MSS advises that the developer consults our generic scoping guidelines http://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren and carries out the following throughout the EIA:

- site characterisation surveys for water quality and fish populations of watercourses likely to be impacted. Results from these surveys, presented in the EIAR, will inform the developer on mitigation measures appropriate to the site and an integrated water quality and fish population monitoring programme. Survey and monitoring work should follow MSS guidelines as outlined in the above web site;
- considers the potential cumulative impacts on water quality and fish population as a result of adjacent wind farms (operational and consented); and
- contacts the Helmsdale District Salmon Fishery Board, if not already done so, for information and further advice on local fish populations.

Kind regards,

Dr Emily E. Bridcut

Freshwater Fisheries Laboratory, Faskally, Pitlochry, Perthshire
PH16 5LB,
www.gov.scot/marinescotland

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POSITIVE ABOUT DISABLED PEOPLE

A59

MOUNTAINEERING SCOTLAND WALKCLIMBSKI

The Granary | West Mill Street | Perth | PH1 5QP
T: 01738 493 942 E: info@mountaineering.scot
www.mountaineering.scot

By email to: Econsents_Admin@gov.scot

Stephen McFadden
Consents Manager
Energy Consents Unit
The Scottish Government

10 September 2019

Dear Sir

Kintradwell Windfarm, near Brora, Sutherland
Reference: ECU00001927

RES ltd has submitted an EIA Scoping Report for a potential wind farm at Kintradwell, near Brora Sutherland. The indicative layout is 22 turbines of up to 149.9m BTH. Turbine bases would mostly be around 400-530m OD, occupying the highest ground within the proposed development site. The site is wholly within the Loch Fleet, Loch Brora and Glen Loth Special Landscape Area.

The proposed site is in close proximity to (c.2km east of) the operational 35-turbine Gordonbush wind farm, which has a consented 15-turbine extension. A revised planning application reducing the consented extension to 11 turbines but increasing their size from 130m to 149.9m BTH is awaiting decision. A little further away to the south (c.10km) is the operational 27-turbine Kilbraur wind farm and extension.

Kintradwell is also near to the West Garty wind farm site (c.6km NE) which was refused by Scottish Ministers in October 2018 because of its "significant detrimental landscape and visual impacts". Further north (c.13km NE) is the proposed 5-turbine site of Navidale which is at appeal having been refused by Highland Council. Note that this last is omitted from Figure 5.3.

Mountaineering Scotland objected to the latter two applications on the basis of their impact on Morven and the wild hill experience thereabouts, and in the case of West Garty also its impact on Ben Dhorain, a Graham south of Glen Loth.

Mountaineering Scotland has reviewed the Scoping Report from the perspective of its members' interests and has the following observations.

1. The ridge-top layout lessens topographic screening and gives visibility across a wide extent of hill and wild land, including Morven just under 20km away and the Graham, Ben Dhorain, 3.5km away. The interests of our members are therefore possibly potentially engaged.
2. Morven is not included in the proposed viewpoints. **Morven should be a viewpoint** and assessment of visual impact upon from a mountaineering perspective it will be pivotal to the position Mountaineering Scotland takes on any future application.

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3. From many directions the proposed development will be seen in the same angle of view as Gordonbush. The visual relationship between the two developments will be a very important consideration, bearing in mind the potentially greater prominence of the higher-altitude Kintradwell site.
4. Para 5.3.15 proposes cumulative impact assessment be limited to within 20km of the site. This is inappropriately tight. It excludes the substantial level of activity around Lairg and the proposed spread southwards of the Caithness wind farms at Dunbeath. **A limit of 35km for cumulative assessment, aligning with the LVIA limit, should be used**.
5. The ZTV map (Figure 5.1) uses misleading shading. As SNH Guidance notes: "Darker colours tend to read as portraying greater visibility than lighter colours ...".[1] Figure 5.1, however, uses its lightest shading for the greatest number of turbines visible and its most eye-catching colour for the lowest band of visibility. It would be more helpful to interpretation if this was not repeated in the EIA Report.

Yours sincerely

REDACTED

Davie Black
Access & Conservation Officer
Mountaineering Scotland

[1] SNH. Visual Representation of Wind Farms: Guidance. February 2017. Paragraph 60.

A61

From: NATS Safeguarding
To: Stephen McFadden, Energy Consents Unit
Date: 23 August 2019

RE: Kintradwell Wind Farm proposal - scoping consultation (SG28554)

Dear Stephen

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully

NATS Safeguarding

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk

A62

From: Bea Ayling, RSPB Scotland
To: Stephen McFadden, Energy Consents Unit
Date: 26 September 2019

RE: Kintradwell Windfarm Scoping

ECU Ref: ECU00001927
Highland Council Ref: 19/03792/SCOP
Kintradwell Wind Farm proposal | Land 3450M North Of Kintradwell Lodge Brora

RSPB Scotland welcomes the opportunity to comment on the above scoping report.

Overall we are content with the content of the report, but have the following comments:

1. The Scoping Report states that the cumulative ornithological assessment will be undertaken using other wind energy projects within 20km of the development. SNH Guidance (2012)[1] indicates that in combination effects should also be considered for all other types of project and pressures. This should be undertaken with regards to the NHZ and any designated sites considered to be impacted by the development.

2. RSPB Scotland is increasingly concerned about the cumulative impacts on birds of wind farm developments in east Sutherland and impacts of potential barrier effects on species such as gulls, geese and divers as it is not known how birds perceive this mass of turbines in the landscape. These developments may impose important constraints on how they travel through the landscape. In addition, although the land take associated with each individual wind farm is modest compared with the total area of east Sutherland, the displacement of species such as golden plover from both the turbine envelope and the surrounding area for each development means that the habitat loss for some species is much greater than apparent from a simple summation of land take.

3. Disturbance effects during operation (turbine presence, personnel/vehicles on site etc) should also be included in the assessment.

4. The SNH Carbon and Peatland map indicates the presence of Class 1 deep peat across the site. The Report does not mention this in relation to turbine and infrastructure layout design and position. We would like to see all infrastructure avoid areas of deep peat over 50cm.

5. We note that five potential turbine locations are not included in viewsheds from vantage points (VPs) and 2 years' data has already been collected. The resulting collision risk modelling will therefore be unreliable when assessing site as a whole. These turbines should be removed from the design if there is no data associated with them.

6. Three golden eagle eyries have been found within the boundary. Any turbines within 1km of these sites should be removed or moved out with a 1km buffer zone from the nests. In addition, connectivity of these birds to the Caithness and Sutherland Peatlands Special Protection Area (SPA) should be included in

the assessment since the boundary lies approximately 4km away at its closest point. The cumulative impacts on this pair should also be assessed.

[1] Reference: SNH, 2012 (https://www.nature.scot/sites/default/files/2017-09/Guidance%20note%20%20-%20Assessing%20the%20cumulative%20impact%20of%20onshore%20wind%20energy%20developments.pdf)

Please don't hesitate to contact me if you have any questions.

Kind regards,

Bea Ayling
Conservation Officer – North Highland

North Scotland Regional Office Etive House, Beechwood Park, Inverness, IV2 3BW

rspb.org.uk

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RSPB Scotland is part of the RSPB, the UK's largest nature conservation charity, inspiring everyone to give nature a home. Together with our partners, we protect threatened birds and wildlife so our towns, coast and countryside will teem with life once again. We play a leading role in BirdLife International, a worldwide partnership of nature conservation organisations.

The Royal Society for the Protection of Birds (RSPB) is a registered charity: England and Wales no. 207076, Scotland no. SC037654

A64

Scottish Forestry
Coilltearachd na h-Alba

Highland & Islands Conservancy
Woodlands
Fodderty Way
Dingwall
Ross-shire
IV15 9XB
Tel: 0300 067 6950
John Risby, Conservator
Email: highland.cons@forestry.gov.scot

5th of September 2019

Mr Stephen McFadden
Energy Consent Unit
Scottish Government

Dear Mr McFadden

Thank you for consulting Scottish Forestry on the Scoping Report (August 2019) for Kintradwell Wind Farm (the proposed development), ref: ECU00001927
Scottish Forestry (SF) is the Scottish Government agency responsible for policy, support and regulation of forestry sector in Scotland. As such SF comments on possible impact of development proposals on forests and woodlands.

The proposed development area, as described in Scoping Report and presented on the scoping maps (Figures 1.1 and 1.2, contains few afforested area, located mainly in the southern part of the site. There is one more excessive afforested area located in the south-wester part of the development area, on the northern bank of Clynemilton Burn, where the forest establishment was grant-aided: 121 ha under Woodland Grant Scheme (WGS3) in 2002, and 4.88 ha under Forestry Grant Scheme (FGS) in 2017. The above mentioned Scoping Report states, in section 7.5.1 that "(…) proposed development area comprises a range of upland habitats, including (…) plantation woodland, also occurring along the proposed site access from Kintradwell on the A9". Further on, in section 15.8.1 the applicant mentions that there's "(…) no forestry in areas being considered for wind turbines (…), it is not envisaged that significant tree felling will be required"; and in section 15.8.2 that "trimming or felling of trees" might be required to ensure safe transportation of turbine components.

Given the above, Scottish Forestry agrees for the Forestry to be scoped out of the Environmental Impact Report (EIA Report) for the proposed development. However SF needs to stress any tree felling proposed to facilitate the proposed development, including creation of quarries and/or borrow pits and improvements to the access track(s) must be clearly specified in relevant sections of EIA Report for the proposed development. Compensatory planting, of an area corresponding to felled area might be required, as per Scottish Government's Policy on Control of Woodland Removal and corresponding guidance. Please see:

https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument

https://forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance/viewdocument

Please don't hesitate to contact me if you have any questions.

Kind regards

REDACTED

Agata Baranska
Regulations & Development Manager
REDACTED

A66

29th August 2019

The Scottish Government
Energy Consents Unit 5 Antlantic Quay
150 Broomielaw
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G2 8LU

Customer Connections
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Cumbernauld Road
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G33 6FB

Customer Connections
Freephone Number - 0800 3890379
E-Mail -
CustomerConnections@scottishwater.co.uk
www.scottishwater.co.uk

Dear Stephen McFadden

KW8 Brora Kintradwell Estate Kintradwell Wind Farm
PLANNING APPLICATION NUMBER: ECU00001927
OUR REFERENCE: 781562
PROPOSAL: Wind Farm (Generating station of >50 < 100 MW Capacity)

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced and would advise the following:

Water

- There is currently sufficient capacity in the **Backies** Water Treatment Works. However, please note that further investigations may be required to be carried out once a formal application has been submitted to us.

Foul

- Unfortunately, according to our records there is no public Scottish Water, Waste Water infrastructure within the vicinity of this proposed development therefore we would advise applicant to investigate private treatment options.

The applicant should be aware that we are unable to reserve capacity at our water and/or waste water treatment works for their proposed development. Once a formal connection application is submitted to Scottish Water after full planning permission has been granted, we will review the availability of capacity at that time and advise the applicant accordingly.

Drinking Water Protected Areas

A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

There may well still be assets within the area that need protected.

Surface Water

For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will **not** accept any surface water connections into our combined sewer system.

There may be limited exceptional circumstances where we would allow such a connection for brownfield sites only, however this will require significant justification taking account of various factors including legal, physical, and technical challenges. However it may still be deemed that a combined connection will not be accepted. Greenfield sites will not be considered and a connection to the combined network will be refused.

In order to avoid costs and delays where a surface water discharge to our combined sewer system is proposed, the developer should contact Scottish Water at the earliest opportunity with strong evidence to support the intended drainage plan prior to making a connection request. We will assess this evidence in a robust manner and provide a decision that reflects the best option from environmental and customer perspectives.

General notes:

- **Scottish Water asset plans can be obtained from our appointed asset plan providers:**

  Site Investigation Services (UK) Ltd
  Tel: 0333 123 1223
  Email: sw@sisplan.co.uk
  www.sisplan.co.uk

- Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area then they should write to the Customer Connections department at the above address.

- If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.

- Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.

- The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or SUDS proposed to vest in Scottish Water is constructed.

- **Please find all of our application forms on our website at the following link https://www.scottishwater.co.uk/Business-and-Developers/Connecting-to-Our-Network**

Next Steps:

- **Single Property/Less than 10 dwellings**
  For developments of less than 10 domestic dwellings (or non-domestic equivalent) we will require a formal technical application to be submitted directly to Scottish Water or via the chosen Licensed Provider if non domestic, once full planning permission has been granted. Please note in some instances we will require a Pre-Development Enquiry Form to be submitted (for example rural location which are deemed to have a significant impact on our infrastructure) however we will make you aware of this if required.

- **10 or more domestic dwellings:**
  For developments of 10 or more domestic dwellings (or non-domestic equivalent) we require a Pre-Development Enquiry (PDE) Form to be submitted directly to Scottish Water prior to any formal Technical Application being submitted. This will allow us to fully appraise the proposals.

  Where it is confirmed through the PDE process that mitigation works are necessary to support a development, the cost of these works is to be met by the developer, which Scottish Water can contribute towards through Reasonable Cost Contribution regulations.

- **Non Domestic/Commercial Property:**
  Since the introduction of the Water Services (Scotland) Act 2005 in April 2008 the water industry in Scotland has opened up to market competition for non-domestic customers. All Non-domestic Household customers now require a Licensed Provider to act on their behalf for new water and waste water connections. Further details can be obtained at www.scotlandontap.gov.uk

- **Trade Effluent Discharge from Non Dom Property:**
  Certain discharges from non-domestic premises may constitute a trade effluent in terms of the Sewerage (Scotland) Act 1968. Trade effluent arises from activities including; manufacturing, production and engineering; vehicle, plant and equipment washing, waste and leachate management. It covers both large and small premises, including activities such as car washing and launderettes. Activities not covered include hotels, caravan sites or restaurants.
  If you are in any doubt as to whether or not the discharge from your premises is likely to be considered to be trade effluent, please contact us on 0800 778 0778 or email TEQ@scottishwater.co.uk using the subject "Is this Trade Effluent?". Discharges that are deemed to be trade effluent need to apply separately for permission to discharge to the sewerage system. The forms and application guidance notes can be found using the following link https://www.scottishwater.co.uk/business/our-

services/compliance/trade-effluent/trade-effluent-documents/trade-effluent-notice-form-h
Trade effluent must never be discharged into surface water drainage systems as these are solely for draining rainfall run off.
For food services establishments, Scottish Water recommends a suitably sized grease trap is fitted within the food preparation areas so the development complies with Standard 3.7 a) of the Building Standards Technical Handbook and for best management and housekeeping practices to be followed which prevent food waste, fat oil and grease from being disposed into sinks and drains.
The Waste (Scotland) Regulations which require all non-rural food businesses, producing more than 50kg of food waste per week, to segregate that waste for separate collection. The regulations also ban the use of food waste disposal units that dispose of food waste to the public sewer. Further information can be found at www.resourceefficientscotland.com

If the applicant requires any further assistance or information, please contact our Development Operations Central Support Team on 0800 389 0379 or at planningconsultations@scottishwater.co.uk.

Yours sincerely

Laura Bunton
Development Operations Technical Analyst
REDACTED

A70

Development Management and Strategic Road Safety
Roads Directorate

Buchanan House, 58 Port Dundas Road, Glasgow G4 0HF
REDACTED

TRANSPORT SCOTLAND
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econsentsadmin@gov.scot

Your ref:
ECU00001927

Our ref:
TS00538

Date:
06/09/2019

Dear Sirs,

ELECTRICITY ACT 1989

THE ELECTRICITY (APPLICATIONS FOR CONSENT) REGULATIONS 2017

SCOPING OPINION REQUEST– KINTRADWELL WIND FARM PROPOSAL, THE HIGHLANDS

With reference to your recent correspondence on the above development, we acknowledge receipt of the EIA Scoping Report (SR) prepared by ITPEnergised (ITPE) in support of the above development.

This information has been passed to SYSTRA Limited for review in their capacity as Term Consultants to Transport Scotland – Roads Directorate. Based on the review undertaken, we would provide the following comments.

Proposed Development & Site Access

We understand that the development will comprise 22 turbines with a tip height of up to 149.9m and a rotor diameter of up to 136m. The site is located approximately 9km north of Brora in Sutherland and we understand that the A9(T) runs through the eastern boundary of the site. The SR indicates that the site will be accessed from a new junction with the A9(T), however, no detail as to the location or design of the junction has been provided at this stage.

Transport Scotland would inform the applicant that any proposed changes to the trunk road network must be discussed and approved (via a technical approval process) by Transport Scotland in consultation with the appropriate Area Manager. The Area Manager for the A9(T) is Marco Bardelli REDACTED

At this stage, we would ask that full details of the proposed junction (including a 1:500 scale preliminary design drawing) are submitted with the EIA Report so that the suitability of the junction can be assessed.

Assessment of Transport Related Environmental Impacts

The SR states that a detailed numerical assessment of transport impacts will be undertaken for the construction phase of the project. The Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic will be used to undertake the assessment of potential environmental impacts associated with increased traffic. We note that the following thresholds as indicated in the Guidelines will be used to determine which links within the transport and traffic study area should be fully assessed:

- Traffic flows will increase by more than 30%, or
- The number of HGVs will increase by more than 30%, or
- Traffic flows will increase by 10% or more in sensitive areas.

In addition, we note that the study area will include the A9(T) between Kintradwell and Helmsdale and the A9(T) between Kintradwell and Invergordon. The SR states that existing daily traffic flows will be established using data sourced from the Department for Transport (DfT) online database of traffic surveys and new traffic surveys (count and speed) undertaken by Automatic Traffic Counter (ATC). We would advise that the information held on the DfT website is not a full dataset. Transport Scotland can however, provide more comprehensive data and stuart.hay REDACTED may be contact in this regard.

Abnormal Load Route Assessment

The SR states that the likely Port of Entry for turbine components will be Invergordon with the abnormal load route then being north on the A9(T) to the proposed site access junction. We note that a full route assessment will be undertaken on the proposed access route. Transport Scotland will require to be satisfied that the size of turbines proposed can negotiate the selected route and that transportation of components will not have any detrimental effect on structures within the trunk road route path. We would ask, therefore, that the route assessment seeks to identify key pinch points on the trunk road network, with swept path analysis undertaken and details provided with regard to any required changes to street furniture or structures along the route.

Matters to be Scoped Out

It is noted that any impacts associated with the operational and decommissioning phase of the development are to be scoped out of the EIA. We would consider this to be acceptable in this instance.

I trust that the above is satisfactory and should you wish to discuss any issues raised in greater detail, please do not hesitate to contact Alan DeVenny at SYSTRA's Glasgow Office REDACTED REDACTED

A72

Yours faithfully
REDACTED

Gerard McPhillips

Transport Scotland
Roads Directorate

cc Alan DeVenny – SYSTRA Ltd.

Kintradwell Wind Farm

Section 36 Application – Scottish Government Stage 1 Gatecheck Report

Author	John Appleton
Date	November 2020
Ref	03501-1373504

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Introduction

1.1 Background

Renewable Energy Systems Limited (hereafter, RES) ('the Applicant'), proposes to submit an application for consent to construct and operate a wind farm, to be referred to as Kintradwell Wind Farm ('the proposed development') on land located approximately 7.7 km north of the village of Brora, in the Highlands.

A request for an Environmental Impact Assessment (EIA) Scoping Opinion under the provisions of Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations) was submitted to Scottish Ministers on 19th August 2019. A formal Scoping Opinion was received on 10th October 2019.

1.2 Purpose of this Report

This document has been prepared in response to the Section 36 (Electricity Act 1989) application gate-checking procedures as established by the Scottish Government's Energy Consents Unit (ECU). The purpose of this document is to describe the design evolution of the proposed development (since the pre-scoping stage), highlighting changes that have been made in response to:

- the environmental constraints identified at the site and its surroundings; and
- as a consequence of the consultation feedback received.

This report also seeks to make some clarifications on the proposed scope of the EIA in advance of the Applicant making a formal application for consent.

In line with the requirements of the gate-checking procedure, this report is structured as follows:

- Section 2 describes the design iteration process;
- Section 3 describes the consultation undertaken and sets out clarification on the proposed scope of the EIA;
- Section 4 describes the community engagement activities undertaken so far and those activities proposed prior to submission of the application for consent; and
- Section 5 sets out the application details, including the timeline for adverts and submission of the application, and the proposed locations of the application for public viewing.

2 Design of the Proposed Development

2.1 Site Location and Description

The application boundary of the Proposed Development (the 'site') is located on rough moorland in the east of Sutherland in the Highland area of Scotland. The nearest turbine is, approximately 7.7 km to the north of Brora, 11.5 km to the west of Helmsdale and the nearest turbine is approximately 12 km to the north-east of Golspie. The central grid reference for the site is BNG (291546, 911173) and it occupies an area of approximately 2,680 hectares (ha).

The site rises steeply from sea-level in the south to 545m Above Ordnance Datum (AOD) at Càrn Garbh in the north.

The southernmost section of the site abuts the A9 road corridor, the Highland Railway, power lines and scattered dwellings and farm buildings. Gordonbush Wind Farm (and the consented Gordonbush Extension) are located to the north-west approximately 1.7 km from the Proposed Development.

The Proposed Development comprises 15 turbines of up to a maximum 149.9m height from the ground to blade tip when vertical. The overall capacity of the Proposed Development will be approximately 63MW. A number of ancillary elements are also proposed, including a temporary construction compound, crane pads, temporary laydown areas adjacent to the turbines, external transformers, internal access tracks, a watercourse crossing, underground cables between turbines, an electrical switching station, an on-site substation and control building, a compound for battery storage, a gatehouse compound, a telecoms mast, concrete batching plant and potential excavations/borrow workings. Access to the site will be directly from the A9.

2.1.1 Iteration of Design

The initial turbine layout was for 37 turbines.

This was reduced to 22 turbines following analysis of initial baseline survey information and a review of public feedback. This was primarily to mitigate ornithological and landscape and visual concerns.

Turbine numbers were reduced to 17 turbines following receipt of a scoping opinion and initial EIA assessments. This was primarily to mitigate ornithological and landscape and visual concerns.

Following further consultation turbine numbers were reduced from 17 to 15 turbines. This was done to address issues raised by the Defence Infrastructure Organisation.

A final 15 turbine layout has been taken forward as the basis of the EIA-R and subsequent application for consent.

3 Scoping and Consultation

3.1 Introduction

In accordance with Regulation 12 of the EIA Regulations, the Applicant sought a scoping opinion from the Scottish Ministers on the environmental information to be provided in the EIA Report (EIAR). The request was accompanied by a Scoping Report (ITPE, August 2019), which set out a summary description of the proposed development, identified the issues proposed to be included in the EIAR and proposed an approach to the assessment of effects in each case. The Scoping Report was simultaneously issued to a list of statutory and non-statutory consultees. A scoping opinion was received from the Scottish Ministers on 10th October 2019.

3.2 Scoping Consultation

The organisations listed in Table 3.1 were contacted as part of the Scoping process and invited to provide feedback.

Table 3.1 – Scoping Consultee List

Statutory Consultees	
The Scottish Government Energy Consents Unit (ECU)	
The Highland Council (THC)	
Scottish Natural Heritage (SNH)	
Scottish Environment Protection Agency (SEPA)	
Historic Environment Scotland (HES)	
Non-Statutory Consultees	
Transport Scotland	Glasgow Prestwick Airport
Marine Scotland	Highlands and Islands Airport
Scottish Forestry	Golspie Community Council
BAA (Glasgow Airport)	Helmsdale Community Council
BAA Aerodrome Safeguarding (Aberdeen)	Joint Radio Company
BAA Aerodrome Safeguarding (Edinburgh)	John Muir Trust
British Horse Society	OFCOM
Brora Community Council	Mountaineering Scotland
BT	NATS Safeguarding
Civil Aviation Authority	RSPB Scotland
Crown Estate Scotland	Scottish Rights of Way and Access Society (ScotWays)
Defence Infrastructure Organisation	Scottish Water
Fisheries Management Scotland	Scottish Wild Land Group (SWLG)
Fisheries Management Scotland – Brora DSFB	Scottish Wildlife Trust
Fisheries Trust	Visit Scotland

The content of the Scoping Opinion, as well as details of the issues raised by each organisation and the Applicant's response on each issue, is provided in Appendix 1: Consultation Register.

4 Community Engagement

4.1 Overview

Prior to undertaking formal public consultation, RES undertook desk-based research to identify 'key stakeholders' located within the vicinity of the proposed development. Those identified included:

- Local Community Councils (Brora, Helmsdale and Golspie);
- Local Ward Councillors (East Sutherland and Edderton ward);
- Constituency MSP (Caithness, Sutherland and Ross); and
- Constituency MP (Caithness, Sutherland and Easter Ross).

4.2 Introducing the Project

RES wrote to key stakeholders in August 2019 to inform them that they were in the early stages of exploring the potential for a wind farm development at Kintradwell. The letter explained that RES had submitted a Scoping Report to the ECU (links to electronic copies of the Report were provided, in addition to hard copies for the Community Councils), and that a public exhibition would be organised in the coming months to engage early with the wider community in the design development process and listen to their feedback on the proposal.

RES also established a dedicated project website in August 2019 at **www.kintradwell-windfarm.co.uk**. The website has been kept up-to-date with information as the project has developed and includes details of consultation, local benefits, RES as a company, as well as the ability to view and download key project information including documentation such as the Scoping report, information banners and visualisations (photomontages and wirelines) displayed at the public exhibitions and project update events, project newsletters, and design layout updates.

4.3 Public Exhibition

RES held a public exhibition event on Tuesday 24th September 2019 in Brora Scout and Guide Hall. The exhibition was held from 12 noon until 8pm to enable a wide cross section of the local community to attend, including people returning from work. Five staff members representing RES were present during the public exhibition to discuss the proposal with attendees, covering a range of specialisms including technical (wind resource and turbine layout), construction, environmental, development and community relations.

Information banners covering the following project-specific topics were on display at the public exhibition:

- About the project;
- Site layout;
- Environmental considerations;
- Transport route and access;
- Supply chain opportunities; and
- Your views count.

In addition to the information banners a Zone of Theoretical Visibility (ZTV) was provided showing proposed viewpoints, in addition to five 'visualisations (photomontages and wirelines)' designed to help give an

impression of what the site would look like at that early (scoping layout) stage from the following selected local viewpoints:

- View from Doll;
- View from Lower Brora;
- View from A9, North Brora;
- View from Beinn Dhorain; and
- View from Ben Horn.

The event attracted more than 50 people, and attendees were able to discuss aspects of interest and question RES on a variety of issues. A questionnaire, to encourage people to provide feedback and comments on the proposal to RES, was also provided and it was made clear (on the exhibition advert, newsletter, questionnaire form, and project website) that comments made on the proposal at that stage should be provided in writing to RES by the closing date of Friday 25th October 2019 (details of how to do this were provided in the advert) and that these comments were not representations to the determining authority but that there would be an opportunity to submit representations to the determining authority should an application be made.

All of the exhibition materials (information banners, ZTV, visualisations, and questionnaire) were uploaded onto the project website at www.kintradwell-windfarm.co.uk from the date of the exhibition, so that they were also accessible for people to view and download online. They remained on the website throughout the 'comments period'.

A total of 39 completed questionnaires were handed in at the exhibition event, in addition to one set of written comments on a contact card. Two further questionnaires were posted to RES shortly after the public exhibition, in addition to two emails with written comments on the proposal. In total, 41 'questionnaires' were received, and 3 sets of written comments outwith the questionnaire forms; all of these comments were received by the closing date of Friday 25th October 2019 for written comments to RES on the proposal.

4.4 Post exhibition engagement

Following the exhibition RES met with individual local residents and businesses (between October 2019 and March 2020) who had raised particular queries or concerns to RES at the public exhibition and wished to discuss them further.

RES also spoke to representatives of Brora Community Council in September 2019 to enquire about meeting formally with the Community Council (as discussed in August 2019). Due to the upcoming Community Council elections (October/November 2019) it was agreed that RES should get back in touch with the Community Council once it had reformed after the elections. In January it was agreed that RES would attend Brora's 17th March 2020 meeting.

At the end of October 2019, once the 'comments period' had closed on 25th October, RES emailed key stakeholders with a brief update on feedback received from the public exhibition.

In December 2019, RES wrote letters to all three of the newly formed local Community Councils (Golspie, Brora and Helmsdale) to introduce the project, provide an update on the public exhibition feedback received, explain that RES was working on updating and improving the design, and confirm that if they had any questions to contact RES. The letter to Brora Community Council also offered to attend an upcoming Community Council meeting to discuss the proposal and public exhibition feedback in more detail.

In December 2019 RES also wrote letters to all those who provided written comments at the exhibition (or during the 'comments period') to acknowledge their comments, answer any questions that had been raised where possible, and provide a general update on the proposal.

4.5 Covid-19 (Coronavirus) pandemic

In mid-March RES took the decision to ban all non-essential travel for staff due to the escalating Covid-19 pandemic and duly contacted Brora Community Council Secretary to explain the situation. It was agreed that RES should not attend the 17th March Community Council meeting and RES followed this up with a letter to Brora Community Council explaining their decision. The letter also clarified that RES would maintain regular contact with the Community Council during the Covid-19 situation.

In April 2020 RES received a letter from Brora Community Council asking for further information regarding consultee consultation on 'viewpoints', the proposed site access from the A9, any updates on the proposed turbine layout, as well as the proposed schedule for submission. A detailed response was emailed back to the Community Council in early July, in line with the stakeholder update described below, which also addressed the specific points and questions raised in the April letter. The letter included an updated comparative turbine layout and associated wirelines and clarified that these figures were indicative, subject to change, and provided for information only. The letter also confirmed that these updated layouts and wirelines had been added to the project website for people to view. RES provided contact details too and encouraged the Community Council to get in touch if they required any further information (such as hard copies) or had any questions on the project.

Following the July letter to Brora Community Council, and ongoing Covid-19 pandemic, RES decided to issue similar project updates to the wider community in order to maintain engagement and keep them up to date with the project during the ongoing lockdown.

In July 2020, update letters were emailed to key stakeholders confirming some of the key design changes and providing an updated comparative turbine layout and associated wirelines. The letters explained that RES had also uploaded the updated layout and wirelines onto the project website for people to access and view; the letter clarified that these figures were indicative, subject to change, and provided for information only. RES also provided contact details, as well as a link to the project website, and encouraged key stakeholders to get in touch if they required any further information (such as hard copies) or had any questions on the project.

A second newsletter was also issued in July 2020, to people who had asked to be kept informed on the proposal, providing a high level map showing the updated comparative turbine layout and informing that this map, in addition to associated updated wirelines, could be viewed on the project website. The newsletter also provided contact details so that people could get in touch with RES if they required further information or had any questions on the proposal, and confirmed that RES was willing to post out hard

copies of the updated layout map and associated wirelines upon request. The newsletter was also emailed to key stakeholders.

Copies of the project update newsletter were also posted out to the following sixteen key venues in Brora, Golspie and Helmsdale (which had begun to open again by this point) in order to help keep people up to date with the proposal:

- Community Centre, Dunrobin Street, Helmsdale;
- SPAR shop, Dunrobin Street, Helmsdale;
- Highland Council Service Point, Main Street, Golspie;
- Voluntary Groups East Sutherland (VGES), Main Street, Golspie;
- The Trawler, Main Street, Golspie;
- Golspie Library, Community Centre, Golspie;
- SPAR shop, Tower Street, Golspie;
- Nisa store, Main Street, Golspie;
- Mitchells Chemist, Main Street, Golspie;
- Sutherland Swimming Pool, Back Road, Golspie;
- Royal Marine Hotel, Golf Road, Brora;
- Scout and Guide Hall, Gower Street, Brora;
- Brora Library, Gower Street, Brora;
- Right Medicine Pharmacy, Victoria Road, Brora;
- Brora Community Centre, Gower Street, Brora; and
- Doctor surgery, Main Street, Brora.

The above steps demonstrate RES' commitment to ongoing engagement keeping key stakeholders and the wider community informed about the proposal during the Covid-19 pandemic and potential ongoing restrictions.

4.6 Ongoing Approach

RES will submit a Pre-Application Consultation Report that will provide further details of engagement activities to date.

RES will continue to proactively engage with communities in proximity to Kintradwell Wind Farm following the submission of a S36 application to ECU.

5 Application Details

RES expects to lodge the Section 36 application in December 2020 for:

- 15 turbines of up to a maximum height of 149.9m from the ground to blade tip;
- at each turbine, associated low to medium voltage transformers, and related switchgear;
- turbine foundations;
- a temporary construction compound;
- crane pads;
- temporary laydown areas adjacent to the turbines;
- internal access tracks;
- a watercourse crossing;
- underground cables between turbines;
- an electrical switching station;
- an on-site substation and control building;
- a telecoms mast;
- a compound for battery storage;
- concrete batching plant;
- gatehouse; and
- potential excavations/borrow workings.

While still subject to confirmation with the local planning authorities and the local community, it is envisaged that the EIAR will, on submission of the Section 36 Application, be available for viewing to the public at Brora Access Point and another, as yet undetermined location in Golspie which will be confirmed at the time of advertising the application for consent.

The application for s36 consent will be advertised in the Edinburgh Gazette for two weeks, a national newspaper for one week and the Northern Times and the Press and Journal (north)for two weeks. The dates of publication are yet to be determined.

Appendix 1: Consultation Register

Consultee	Summary	Action
Planning Policy/EIA Requirements		
The Highland Council (THC)	Particular attention should be paid to the provisions of the Onshore Wind Energy Supplementary Guidance	Noted.
	The Council requests that when measuring the positive and negative effects of the development a four point scale is used advising any effect to be either strong positive, positive, negative or strong negative.	Effects will be assessed on an 8 point scale as is industry standard. This is a well-tested and well-established methodology and means of describing the level of effects and is considered more comprehensive and appropriate than the suggested 'four point scale'.
LVIA		
NatureScot (formerly Scottish Natural Heritage (SNH))	NatureScot are not able to comment on the landscape and visual impacts of the proposal. They are currently providing detailed landscape and visual advice in only the highest priority circumstances, where the effects of proposals approach or surpass levels that raise issues of national interest. However, we have guidance on assessing the landscape and visual impacts of wind farms, which can be used to inform the effects of this proposal, see…	The LVIA will be undertaken using all relevant Scottish Natural Heritage guidance.
THC	All photography to be taken with a 35mm format full frame sensor camera, with use of 50mm and 75mm focal lengths.	All photography taken with suitable camera and focal lengths.
	Photomontages to be produced using The Highland Councils 'Visualisation Standards for Wind Energy Developments' (July 2016) and SNH guidance.	All photomontages will be produced using relevant guidance.
	Existing turbines should be re-rendered even if they appear to be facing the viewer.	Photomontages to be amended accordingly.
	All elements of construction to be considered, including on-site borrow pits and access roads.	Will be included.

Consultee	Summary	Action
	Undertake the cumulative assessment over a 35km area. THC stated they were generally content with the viewpoints proposed. However, requested 3 additional viewpoints: • A9 – Dornoch Bridge • A897, Kinbrace • B871 between Syre and Kinbrace	35km area to be considered. 3 additional viewpoints to be included within the assessment.
	Include core paths, the national cycle network, long distance trails, and the North Coast 500 within the assessment.	To be included as receptors.
	Include an assessment of impacts upon Wild Land Areas and Special Landscape Areas.	Separate assessments to be included.
	Assessment using the criterion set out in The Highland Councils Onshore Wind Energy Supplementary Guidance.	All relevant guidance to be used.
	Include a lighting assessment and residential visual amenity study.	Lighting assessment not required as turbines are below 150m in height. There are no residential properties within 3km of the proposed turbines, therefore, residential receptors will only be included in main LVIA only.
Loth Residents	Request that AOD levels for each turbine base be included in the EIA information.	Will be included.
	Undertake the cumulative assessment over a 40km area.	35km area will be considered, in accordance with the ECU Scoping Opinion.
	Include refused applications on cumulative plans.	This is not a requirement of Highland Council Guidance for the production of cumulative plans and not relevant. We therefore do not intend to cover this in the application.
	Amend the colours of the scoping ZTV to match similar applications.	ZTVs will be produced in accordance with SNH guidance 'Visual Representation of Wind Farms' (Feb 2017).
	Request for additional viewpoints to north: • Kinbrace / B871 Syre Road • A897 Strath Road around Kildonan Station • Summit of Morven • Summit of Scaraben	Kinbrace / B871 will be included as a viewpoint. Other viewpoints will not be included due to limited theoretical visibility.

Consultee	Summary	Action
	Request for additional viewpoints to south: • Brora Golf Course/Main Beach • Glen Loth Road travelling south • A9/Poles – Dornoch • Embo • Tain • Struie Viewpoint / B9176	These locations will not be included for the following reasons: Brora Golf Course/Main Beach – there are already two assessment viewpoints in Brora which provide a good representation of this area. • Glen Loth Road travelling south – this route has no visibility of the proposals. • A9/Poles – Dornoch – there is only a short section of the A9 in this area from which visibility would be available and is already represented by the nearby VP13. • Embo – This area is already represented by the nearby VP14. • Tain – At a distance of over 30km from the site it is not considered necessary to include a viewpoint from this location. • Struie Viewpoint / B9176 - At a distance of over 35km from the site it is not considered necessary to include a viewpoint from this location.
	The potential to use monochrome for specific viewpoints, where a number of different wind farms are in the views.	Measures to identify individual wind farms will be included.
	Existing turbines should be re-rendered even if they appear to be facing the viewer.	Photomontages to be amended accordingly.
	Include a residential visual amenity study.	No residential properties are located within 3km of the proposed turbines, therefore, residential receptors will be included in main LVIA only. This approach as accepted by Highland Council in paragraph 3.18 of their Scoping Opinion.
Mountaineering Scotland	Morven to be included as a viewpoint.	Morven will not be included as one of the viewpoints due to its distance from the site (over 15km) and the relatively limited visibility of the proposals from the landscape to the north-east of the site. We will however include a wireframe. It is noted that The Highland Council did not raise concerns that this location was not included.

Consultee	Summary	Action
	Consider the visual relationship of the proposals with Gordonbush. Undertake the cumulative assessment over a 35km area.	Gordonbush to be included in the cumulative assessment. 35km area to be considered.
	Amend ZTV colours to ensure darker colours portray greater visibility.	ZTVs to be produced in accordance with SNH guidance 'Visual Representation of Wind Farms' (Feb 2017).
Brora Community Council	Brora Community Council considers that the amenity of residents and visitors will be adversely affected by the proposed development.	Turbines have been removed and reconfigured to minimise visual impacts.
	The proposed development will dominate the coastal hill ridge that forms the northern backdrop to our community. The development will be fully visible above the ridge line and will dominate the northern view for many residents and the forward view for travellers on the A9.	In particular views from Brora and Doll have been closely considered. Turbines have been removed and reconfigured to minimise visual impacts. In particular the turbines on Col-bheinn have be significantly reduced in response to public comments.
	Comments regarding the poor quality of mapping and inaccurate distances.	These are noted and will be addressed in the EIA Report materials
	Comments regarding the poor quality of mapping and inaccurate distances.	These are noted and will be addressed in the EIA Report materials
Energy Consents Unit (ECU)	Cumulative assessments should be up to a minimum of 35 kilometres as stipulated by the Highland Council and Mountaineering Scotland.	Cumulative assessment will be undertaken to 35km
	Due to the Proposed Development's close proximity to a number of Wild Land Areas assessment of impacts will be required. Scope and methodology of said assessments should be decided following discussions between the Company and SNH.	Specific Wild Land Assessments will be provided. SNH have advised they are not in a position to provide advice.
	The advice from the Highland Council regarding presenting Landscape and Visual Impacts should be noted by the Company especially the recommendation in respect of making a distinction between landscape impacts and visual impacts in the EIA report.	Noted.
	It is recommended by the Scottish Ministers that the final list of viewpoints and visualisations should be agreed following discussion between the Company, the Highland Council, Historic Environment	The list of VPs has been amended to include the suggestions of The Highland Council.

Consultee	Summary	Action
	Scotland, SNH, Mountaineering Scotland and the Loth Residents group.	
Cultural Heritage		
THC	All designated sites which may be affected by the development either directly or indirectly should be identified. This includes: architectural heritage (Conservation Areas, Listed Buildings); archaeological heritage (Scheduled Monuments); the landscape (including designations such as National Parks; National Scenic Areas; Areas of Great Landscape Value; Gardens and Designed Landscapes and general setting of the development; and the inter-relationship between the above factors.	Data has been obtained from the Historic Environment Record (HER) and the Historic Environment Scotland Spatial Data Warehouse. The data will be appraised for the relative sensitivities.
	The assessment should contain a full appreciation of the setting of the historic environment assets and the likely impact on their settings.	A list of viewpoints has been agreed through consultation with Historic Environment Scotland (HES) and THC Historic Environment Team (HET).
	Where significant impacts are likely, photomontages and wireframe views should be provided.	The assessment will describe the predicted effect on the settings of each of these assets.
	Liaison with the Council's Historic Environment Team (HET) on the scope of the archaeological assessments is recommended.	Post scoping consultation has been undertaken with HET to agree an appropriate study area and the approach to the assessment (see below).
HES	Agreed that the Outer Study Area extends 10km from the finalised turbine locations.	Noted.
	Content that views towards an asset with sensitive setting will be considered, even where no visibility is predicted from the asset itself.	Noted.
	Agreed that the desk-based assessment will establish a reliable baseline.	Noted.
	Agreed that the proposed methodology for assessment of effects is sufficient.	Noted.
	Further explanation is required regarding the archaeological potential at a high altitude (above 350m) being considered as low or negligible.	An assessment of the archaeological potential of the Proposed Development site will be included.

Consultee	Summary	Action
	The following heritage assets should be added to the list of visualisations: Lothbeg Bridge, long cairn 210m ESE of (SM1808); Carrol, broch 600m SSW of, Loch Brora (SM1846); and Carradh nan Clach, two standing stones (SM1775).	The assessment will describe the predicted effect on the settings of each of these assets. There is no predicted visibility of the Proposed Development from Lothbeg Bridge, long cairn 210m ESE of (SM1808). Two other scheduled monuments added to visualisation list. Post scoping consultation was undertaken with HET to agree an appropriate study area and the approach to the assessment (see below).
	Content that a visualisation from Lothbeg Bridge long cairn is not required and welcome the inclusion of the two additional scheduled monuments suggested in the Scoping Opinion.	Noted.
	Additional information provided in the post-consultation letter regarding the archaeological potential at high altitude should be forwarded to Highland Council's archaeology service for comment.	Details of the archaeological potential at high altitude request for clarification and the response were outlined to HET at THC in the post-consultation letter dated 31/01/2020.
Loth Residents	Cinn-Trolla Broch should be added to the list of proposed visualisation viewpoints.	There is no predicted visibility of the Proposed Development from Cinn-Trolla broch or its near vicinity and as such a visualisation will not be included.
HET	Content with the approach outlined, including the justification for limiting the survey areas.	Noted.
	Content with the proposed visualisations list, and there are no additional heritage assets that would need to be included.	Noted.
Ecology		
THC	The Environmental Impact Assessment Report (the EIA Report) should provide a baseline survey of the animals (mammals, reptiles, amphibians, etc) interest on site. It needs to be categorically established which species are present on the site, and where, before a future application is submitted.	Baseline studies and desk study (external) data for habitat, National Vegetation Classification (NVC), bats and other protected species will be summarised within the EIA Report and included in full in Technical Appendices.
	Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide (see	Noted

Consultee	Summary	Action
	later). Details of any habitat enhancement programme (such as native tree planting, stock exclusion, etc) for the proposed site should be provided. It is expected that the EIA Report will address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.	
	The EIA Report should provide a baseline survey of the plants (and fungi) and trees present on the site to determine the presence of any rare or threatened species albeit it is accepted that the likelihood is low given the present land use of the site.	Noted.
	If wild deer are present or will use the site an assessment of the potential impact on deer will be required. This should address deer welfare, habitats and other interests.	Kintradwell Estate has provided deer population estimates, cull rates and hunting quotas that can be factored into the consideration of potential impacts on deer. Kintradwell Estate forms part of the Eastern Sub-Group landholdings of the East Sutherland Deer Management Group (SDMG), whose website provides the associated Deer Management Plan (DMP) and presents data that is used to help with the assessment of deer in relation to the Proposed Development.
	The EIA Report needs to address the aquatic interests within local watercourses, including downstream interests that may be affected by the development, for example increases in silt and sediment loads resulting from construction works; pollution risk / incidents during construction; obstruction to upstream and downstream migration both during and after construction; disturbance of spawning beds / timing of works; and other drainage issues. The EIA Report should evidence consultation input from the local fishery board(s) where relevant.	Aquatic interests will be included within the EIA Report assessment in both the Hydrology and Hydrogeology and Ecology chapters. Both the Helmsdale and Brora District Salmon Fishery Boards have been consulted as part of this exercise (see below).
	The EIA Report should include an assessment of the effects on Ground Water Dependent Terrestrial Ecosystems (GWDTE).	An assessment of potential GWDTEs will be included as part of the NVC survey and assessment. Further consideration of GWDTEs (informed through the NVC survey results) will be included within the Geology, Hydrology and Hydrogeology chapter.

Consultee	Summary	Action
	The Peat Management Plan to be included in the Construction Environmental Management Plan (CEMP) should be formulated and finalised following discussions between the Company and SEPA.	Detailed consideration will be made in relation to peat and its management in the EIA Report.
SEPA	Peat: Much of the site is on peat, therefore SEPA would expect the layout to be designed to minimise the disturbance of peat and be supported by a full site-specific Peat Management Plan. This should include early discussions regarding the appropriate reuse of excavated peat. Peat depth surveys will be required in in line with the Scottish Government's Guidance on Developments on Peatland.	Detailed consideration will be made in relation to peat and its management in the EIA Report.
	Ground Water Dependant Terrestrial Ecosystems: SEPA will expect the layout to avoid GWDTEs, which are identified through a National Vegetation Classification (NVC) survey. Please note that the NVC survey should be overlain with all proposed infrastructure to aid in assessment. A map demonstrating that all GWDTE are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m must also be submitted.	An assessment of potential GWDTEs is included as part of the NVC survey and assessment.
	Site Design: SEPA would expect all turbines and connecting tracks (excluding crossings) to be located at least 50 m from any watercourse (and lochs), watercourse crossings minimised and an approach taken which minimises the overall infrastructure required to support the development. SEPA would expect the proposed access tracks to make use of existing infrastructure and the tracks should be demonstrated to be as short as possible. SEPA are unlikely to support excessive use of spurs for example.	The design of the site and layout has been a fluid process that has been informed through careful consideration of the baseline survey results and ecologically sensitive features that have been identified. The EIA Report will outline in more detail how the ecological baseline has informed this process.
	In the first instance, SEPA expects the location of access tracks to avoid areas of deep peat and minimise their impacts to peat. Such mitigation might include the use of floating tracks over peat exceeding a depth of 1m. Floating tracks would mitigate against impacts on peat as well as the hydrological impacts of any GWDTEs	Noted.
	Pollution prevention and environmental management: One of SEPA's key interests in relation to developments is pollution prevention measures during the periods of construction, operation,	Noted

Consultee	Summary	Action
	maintenance, demolition and restoration. A schedule of mitigation supported by the above site-specific maps and plans must be submitted. These must include reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils at any one time) and regulatory requirements. They should set out the daily responsibilities of ECoWs, how site inspections will be recorded and acted upon and proposals for a planning monitoring enforcement officer.	
NatureScot	**Summary of Ecological Responses** The key issues that should be addressed in the EIA are as follows; • The potential impacts to The Moray Firth Special Area of Conservation (SAC); and • Protected species and deer. Protected areas: This proposal is hydrologically connected to the Moray Firth SAC, protected for its sub-tidal sandbanks and bottlenose dolphin. *"Moray Firth SAC - As the Moray Firth SAC is connected to the development site, through streams and burns flowing into the sea, we recommend that the impacts of this proposal are considered in context to [this] protected area. Therefore, we recommend that it would be more appropriate to scope in HRAs for [the SAC], even if impacts can be controlled through best practice construction techniques (e.g. pollution control, etc.)."*	Potential connectivity with the Moray Firth SAC Will be considered in the EIA Report.
	Species & habitats: The mammal species being considered appears satisfactory. We are aware that badgers are present within this upland landscape.	Noted.
	The hill ground running parallel to the east coast of Sutherland appears to support a healthy population of reptiles (e.g. adders), therefore significant effects are likely.	No adder were recorded throughout any of the surveys conducted across the site, but they may be present in some areas aware from steeper slopes. The EcIA report will provide details on adder.

Consultee	Summary	Action
	We recommend that a Deer Assessment is included within the EIA Report. This will help show whether there will be any effect on the local deer population from construction works, etc.	Kintradwell Estate has provided deer population, cull rates and hunting quotas that can be factored into the consideration of potential impacts on deer. Kintradwell Estate forms part of the Eastern Sub-Group landholdings of the East Sutherland Deer Management Group (SDMG), whose website provides the associated DMP and presents data that is used to help with the assessment of deer in relation to the Proposed Development.
	Carbon rich soils, deep peat and priority peatland habitat: The Scoping Report appears to be light on the important aspects of peatland habitat. The proposed development boundary includes areas of carbon rich soils, deep peat and priority peatland habitat including areas identified as class 1 and 2 on the Carbon and Peatland Map (2016). Class 1 and 2 peatland areas are likely to have high conservation value. These areas are afforded significant protection under Scottish Planning Policy (SPP). The EIA Report will need to address, in detail, how a wind farm can be constructed without compromising this national interest. Opportunities to mitigate impacts through siting, design and other measures should be fully considered. This may also include options for significant habitat restoration to mitigate any loss and damage to this peatland interest, if appropriate.	The EIA Report will provide detailed consideration in relation to SPP (2014) as well as the SNH Guidance Instruction Note (2020) advising on carbon-rich soils and deep peat and its management. Plans for peat enhancement measures and the restoration of eroded blanket bog habitats will be presented in an Outline Habitat Management Plan.
The RSPB	The SNH Carbon and Peatland map indicates the presence of Class 1 deep peat across the site. The Report does not mention this in relation to turbine and infrastructure layout design and position. We would like to see all infrastructure avoid areas of deep peat over 50cm.	The design of the site and layout has been a fluid process that has been informed through careful consideration of the baseline survey results and peat survey. Details on the consideration of peat with respect to the design and mitigation will be presented in the EIA Report.
Marine Scotland	Watercourses within and downstream of the Proposed Development area support both salmon and trout populations and therefore MSS advises that the developer consults the MSS generic scoping guidelines and carries out the following throughout the EIA:	Fish habitat and population surveys have been undertaken as part of the assessment of the aquatic ecology within the study area. The findings will be outlined in this ecology chapter, while the full survey results will be included in a Technical Appendix.

Consultee	Summary	Action
	• Undertakes site characterisation surveys for water quality and fish populations of watercourses likely to be impacted. Results from these surveys, presented in the EIA Report, will inform the developer on mitigation measures appropriate to the site and an integrated water quality and fish population monitoring programme. Survey and monitoring work should follow MSS guidelines; • Considers the potential cumulative impacts on water quality and fish population as a result of adjacent wind farms (operational and consented); and • Contacts the Helmsdale District Salmon Fishery Board for information and further advice on local fish populations.	Although the sensitivity of the watercourses within the site are acknowledged, precautions (i.e. pollution protection guidelines and mitigation measures outlined in the CEMP) will ensure the avoidance of any degradation of water quality and/or impacts on fish populations. Fish habitat and population surveys have been undertaken as part of the assessment of the aquatic ecology within the study area. The findings will be outlined in this ecology chapter, while the full survey results will be provided in a Technical Appendix.
Brora District Salmon Fishery Board (BDSFB)	BDSFB state that "*…we do not believe that migratory fish can get past the waterfall on the Loth River. This obstacle is listed on the Marine Scotland NMPI Map under 'obstacles to Fish Passage"*. Specifically, in relation to the Kintradwell Burn the BDSFB case officer states that *"… we don't hold any specific data on the Loth River but salmon can only go as far as the waterfall which is a short distance from the A9 road bridge. I understand that there has been electrofishing surveys carried out in the river for previous research projects - the owner may have access to these."*	Noted.
Helmsdale District Salmon Fishery Board (HDSFB)	Responded stating that any enquiries within this catchment should be directed to the Brora District Salmon Fishery Board.	Noted.
Loth Residents	Loth Residents have noted that the area where the turbines are proposed is Class 1 – Priority Peatland Habitat which attracts significant protection. The turbine site and any proposed access routes must be fully surveyed for peat depths and the applicant will	Detailed consideration will be made in relation to peat and its management in the EIA Report.

Consultee	Summary	Action
	need to demonstrate convincingly how their Proposed Development can be achieved without compromising a Class 1 Peatland Habitat.	
Ornithology		
NatureScot	This proposal is approximately 3.8km from a component part of the Caithness & Sutherland Peatlands Special Protection Area (SPA), protected for its upland birds.	The nearest Proposed Development turbine is 4.58km from the SPA.
	Although the chances of divers linked to this SPA flying through this development to the sea may seem slim, this aspect should still be fully assessed and presented within the EIA Report. VP survey work should be undertaken at a time of day which will maximise flight data.	Two full years of bird surveys have recorded no divers within the 2km survey area. Additionally, due to the presence of Gordonbush Wind Farm between the Proposed Development and the SPA and the geography of the area (divers from the SPA are more likely to follow the glens/river valleys to the coast), the likelihood of divers commuting over the site is considered to be very low. Flight activity surveys have been undertaken across a range of day times.
	Bird survey results should help to gauge whether there will be any impact to SPA merlin. Breeding season vantage point work should suffice in assessing the level of impact on any summer greylag geese that may have connections with this Ramsar Site.	Merlin and breeding greylag goose activity will be detailed in the Baseline Conditions section – this will include a review of any potential likely significant effects on the SPA and the requirement for a Habitats Regulations Appraisal (HRA).
	It is unlikely that golden eagles at this site will be linked to this SPA and therefore they may be considered in context to the Natural Heritage Zone (NHZ) population.	Noted that the breeding golden eagle are not considered to be part of the SPA population and will be assessed within the context of the NHZ population.
	If appropriate, assessments should be carried out under the Conservation Objectives of this SPA.	The nearest Proposed Development turbine is 15.53km from the SPA.
	The site is also within connectivity distance (16.3km) to the Dornoch Firth & Loch Fleet SPA, protected for non-breeding waterfowl, such as greylag geese.	Migrating greylag goose activity will be detailed in the Baseline Conditions – this will include a review of any potential likely significant effects on the SPA and the requirement for an HRA.
	As this development is within connectivity distance of this protected area for greylag geese, detailed assessment will be required to gauge if the wind farm is likely to have adverse impacts. We note that this proposal has already recorded levels of flight activity, probably from Icelandic birds migrating through the development in the spring and	The nearest Proposed Development turbine is c.3.8km from the pmSPA (closest access track point where it joins the public road is c.200m from the SPA).

Consultee	Summary	Action
	autumn. Therefore, we advise that an HRA should be completed for greylag.	
	This proposal is hydrologically connected to the Moray Firth Special Area of Conservation (SAC), protected for its sub-tidal sandbanks and bottle nosed dolphin. The Moray Firth proposed marine (pmSPA) (not identified within the Scoping Report) is protected for its range of inshore marine waterfowl. As both of these protected areas are connected to the development site, through streams and burns flowing into the sea, we recommend that the impacts of this proposal are considered in context to these protected areas. Therefore, we recommend that it would be more appropriate to scope in HRAs for both sites, even if impacts can be controlled through best practice construction techniques (e.g. pollution control, etc.).	The Moray Firth SAC will be considered in the Ecology and Geology, Hydrology and Hydrogeology chapters. The potential for connectivity/ornithological effects on the Moray Firth pmSPA will be considered in the assessment.
	This wind farm has the potential to impact upland birds (e.g. golden eagle & golden plover). Therefore, this should be fully assessed within the EIA Report, including the potential for displacement and/or collision risk.	Noted.
	Birds not connected to a protected area should be assessed against the relative NHZ populations.	Noted.
	As such a high level of golden eagle activity occurs within the development site, we recommend extra effort is undertaken to fully appreciate the importance of the development site for this species. We recommend that modelling is carried out to show which areas of the site boundary have high value for eagles. This, along with vantage point data and information on eyrie locations, should help to inform whether there is a wind farm layout within the estate boundary which will allow the golden eagle territory to be retained.	A Golden Eagle Population Model (GEPM) will be undertaken as part of the assessment. Predicting Aquila Territories (PAT) modelling and Golden Eagle Territory (GET) modelling will also be undertaken.
	In relation to potential construction disturbance distances for golden eagle, please see; Implications of Additional Protection for Golden Eagle under Schedules A1 & 1A of the Wildlife and Countryside Act	Effects on nesting, foraging and roosting golden eagles will be considered.

Consultee	Summary	Action
	(1981). Roosting disturbance, even outwith the breeding season, will need to be considered within the EIA Report.	
	To fully assess the environmental impacts of this proposal through the EIA process, we recommend that the entire development receives adequate survey effort, as outlined in NatureScot (2017). We note the Scoping Report highlights that two years of bird survey work will be considered complete after August 2019. In this context, we are disappointed to note that 23% of the Proposed Development has not received any bird survey vantage point work. This is especially an issue for golden eagle and as a result it is likely to underestimate the level of impact for this iconic species. We regularly provide developers with helpful pre-application comments on the scope of bird survey work for wind farm developments in advance of work starting, but we have received no requests for this development. Rather than completing an additional two years of bird survey work, another option open for consideration is to remove turbines 18, 19, 20, 21 & 22 from the wind farm layout.	It should be noted that the 23% NatureScot refer to is calculated from the fact that five of the 22 turbines in the scoping layout are not covered by the viewsheds. This was noted in paragraph 8.4.7 of the scoping report ("It is acknowledged that the draft scoping layout contains five turbines that are outwith the current viewshed areas (T18, T19, T20, T21 and T22) and should any turbines remain outwith the viewshed areas in the final design, this will be accounted for in the collision modelling"). For the current turbine layout, five of the 15 turbines are not covered by the viewsheds, however as noted in the scoping report, activity rates are likely to be similar to those recorded within the Collision Risk Analysis Area (CRAA) and so the collision model results will be reflective of the site as a whole, including the area around turbines beyond the 2km viewsheds.
Royal Society for the Protection of Birds (RSPB)	The Scoping Report states that the cumulative ornithological assessment will be undertaken using other wind energy projects within 20km of the development. SNH Guidance (2012) indicates that in combination effects should also be considered for all other types of project and pressures. This should be undertaken with regards to the NHZ and any designated sites considered to be impacted by the development.	Paragraph 8.3.1 of the scoping report states *"cumulative assessment – as per SNH (2018b), the Natural Heritage Zone (NHZ) level is considered practical and appropriate for breeding species of wider countryside interest."* All wind farm projects, and any other projects or activities subject to EIA that are deemed relevant will be considered in the cumulative assessment.
	RSPB Scotland is increasingly concerned about the cumulative impacts on birds of wind farm developments in east Sutherland and impacts of potential barrier effects on species such as gulls, geese and divers as it is not known how birds perceive this mass of turbines in the landscape. These developments may impose	Noted. Cumulative effects will be considered.

Consultee	Summary	Action
	important constraints on how they travel through the landscape. In addition, although the land take associated with each individual wind farm is modest compared with the total area of east Sutherland, the displacement of species such as golden plover from both the turbine envelope and the surrounding area for each development means that the habitat loss for some species is much greater than apparent from a simple summation of land take.	
	Disturbance effects during operation (turbine presence, personnel/vehicles on site etc) should also be included in the assessment.	Disturbance effects during operation will be considered.
	We note that five potential turbine locations are not included in viewsheds from vantage points (VPs) and 2 years' data has already been collected. The resulting collision risk modelling will therefore be unreliable when assessing site as a whole. These turbines should be removed from the design if there is no data associated with them.	Refer to comments in relation to NatureScot's comments on the same issue above. The potential limitations associated with coverage will be fully considered in the collision risk assessment, and model outputs will be representative of the site as a whole.
	Three golden eagle eyries have been found within the boundary. Any turbines within 1km of these sites should be removed or moved out with a 1km buffer zone from the nests. In addition, connectivity of these birds to the Caithness and Sutherland Peatlands SPA should be included in the assessment since the boundary lies approximately 4km away at its closest point. The cumulative impacts on this pair should also be assessed.	As a result of consultation with stakeholders, no turbines will be located within 1km of a nest. Potential connectivity with SPAs will be assessed in the baseline. NatureScot has stated that they consider there to be no connectivity between the site and the Caithness and Sutherland Peatlands SPA and that effects to golden eagle should be assessed against the NHZ population.
Loth Residents	The on-going Ornithological Activity would indicate that the site is rich in protected avian species, possibly refugees from the nearby Gordonbush site. The negative effects of this wind farm are recognised in the 2016 RSPB Golden Plover Study which was carried out over a five-year period. In ornithological terms this proposal is in very sensitive territory and will inevitably have a dramatic impact on the safe margin habitat to the east of the Gordonbush site. Surveys should be thorough and estimates and conclusions should take full account of the experience on and the data from the neighbouring wind farm site.	Golden plover is considered to be a key species and will be included in the assessment. Available data from Gordonbush Wind Farm and Gordonbush Wind Farm Extension will be considered in the cumulative assessment.

Consultee	Summary	Action
	The general area of the peatlands contains many protected birds. These are part and parcel of landowner responsibilities under the new Agriculture Environment and Climate Scheme (AECS). The proposed World Heritage UNESCO site of the peatlands, covering 2,000 km2 (0.5 million acres), borders the area of the proposed wind farm. Species mentioned for special attention include curlew, lapwing, oystercatcher, redshank, and snipe. In the 2008 Breeding Bird Assemblage survey, which found the area to be in good ornithological condition, the following species were also identified: red throated diver, golden eagle, merlin, ring ouzel, stonechat and raven. In addition, more recently, there is a drive to protect the hen harrier and the latest reintroduced species, sea eagle. All of these species are found on neighbouring land and in habitat similar to the site of the proposed wind farm. It must therefore be the site for many protected and rare birds.	Noted.
Geology, Hydrology and Geohydrology		
THC	Nature of the hydrology and hydrogeology of the site and potential impacts on watercourses and water supplies including water quality, water quantity and aquatic flora and fauna.	Noted. To be included in assessment.
	Identify all watercourse crossings including photographs of watercourse affected and dimensions of the watercourse.	Noted. Schedule of watercourse crossings to be included.
	Identify any private water supplies (informed by an on-site visit) and provide details of measures proposed to prevent contamination or physical disruption.	Noted.
	A comprehensive peat slide risk assessment, carbon balance calculations and assess the potential impacts on peat and the local geology.	Noted.
SEPA	Scoping Opinion dated 19th September 2019, requested the following: • Map of all engineering activities in or impacting the water environment including proposed buffers, flood risk assessment and related CAR applications.	Noted and to be included. With respect to the Decommissioning Statement, the Applicant will be seeking in-perpetuity consent for the Proposed Development. In the event of decommissioning, or replacement of turbines, decommissioning would be undertaken in line with best practice processes and methods at that time and

Consultee	Summary	Action
	• Map and assessment on impacts upon Groundwater Dependent Terrestrial Ecosystems (GWDTE) and buffers. • Peat depth survey and table detailing re-use proposals. • Map and site layout of borrow pits. • Schedule of mitigation including pollution prevention measures. • Borrow Pit Site Management Plan of pollution prevention measures. • Map of proposed surface water drainage layout. • Decommissioning statement	would be managed through an agreed Decommissioning Environmental Management Plan.
NatureScot	Scoping Opinion dated 12th September 2019, requested the following: Potential impacts to the Caithness and Sutherland Peatlands Special Protection Area (SPA), the Dornoch Firth and Loch Fleet SPA and the Moray Firth Special Area of Conservation (SAC) and proposed SPA. Potential impacts to carbon rich soils, deep peat and priority peatland habitats.	Noted.
Loth Residents	Scoping Opinion dated 8th September 2019, noted that: • The Proposed Development is located in a Class 1 Peatland Habitat. The turbine site and any proposed access routes must be fully surveyed for peat depths and the applicant will need to demonstrate how their proposed development can be achieved without compromising a Class 1 Peatland Habitat.	Detailed consideration will be made in relation to peat and its management in the EIA Report.
Marine Scotland	Scoping Opinion dated 28th August 2019 noted that watercourses within and downstream of the Proposed Development support both	Noted.

Consultee	Summary	Action
	salmon and trout populations. The following information is advised to be presented in the EIA report: Site characteristics surveys of the watercourses for water quality and fish populations; Site specific mitigation plans including a robust integrated water quality and fish population monitoring programme to be carried out before, during and after construction; and Considers the potential cumulative impact on water quality and fish populations.	
RSPB	In their Scoping Opinion dated 26th September 2019 recorded that the Proposed Development is located in areas classified as Class 1 deep peat and infrastructure should avoid areas of deep peat over 50 cm.	Peat has been factored into the site design and will be assessed with the EIA Report.
Scottish Water	Their Scoping Opinion dated 29th August 2019 confirmed no objection. A review of their records indicates that there are no drinking water catchments or water abstractions sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.	Noted.
Traffic and Transport		
Transport Scotland	Transport Scotland considered the proposed methodology is acceptable and agreed to the scoping out of operational and decommissioning impacts. It was also requested that information is provided to prove the suitability of the proposed abnormal load	The advice and data offered by Transport Scotland will be considered in the EIA Report.

Consultee	Summary	Action
	route. Transport Scotland also advised they could provide a more comprehensive dataset of daily traffic flows than available online.	
THC	THC confirmed their general satisfaction with the proposed methodology and included details of information to be provided in the EIA Report.	The information requested by THC will be included in the EIA Report.
Noise		
THC (Post-scoping)	THC confirmed that no background noise measurements are required.	Noted.
Aviation		
DIO	Extensive consultation has been undertaken to establish the need for visual lighting of turbines.	Turbine numbers have been reduced to 15 to avoid the need to visually light.
Socio-economic, Recreation and Tourism		
THC	Socio-economics, recreation and tourism should have its own chapter which considers the economic activity and jobs supported. The chapter should consider the effect on a range of groups, including tourists and tourist related businesses and recreational groups. The chapter should consider the effect on access.	Noted. Chapter covering socio-economic, recreation and tourism to be included in EIA Report.
Loth Residents	The effect on the North Coast 500 and on sporting visitors and recreational field sports should be considered.	Will be included in EIA Report.
Air Quality		
THC	THC confirmed that air quality can be scoped out of the EIA.	Noted.
Battery Storage		
	In the event that battery storage is to be included in the proposed Development, full details of what it will entail (scale, dimensions	Noted.

Consultee	Summary	Action
	etc), its location in the site, minimum and maximum export capacity of megawatts and megawatt hours of electricity and a full assessment of its impacts and effects and all proposed mitigation should be included in the EIA report.	

Appendix 4.4 Shadow Flicker

Executive Summary

This appendix presents an assessment of the potential shadow flicker effects from the Proposed Development on residential receptors. Within the study area for shadow flicker effects (within 130 degrees either side of north from each turbine, and out to 10 rotor diameters), there are no identified receptors with potential to experience flicker effects. Therefore, no further assessment of potential shadow flicker effects was undertaken.

Introduction

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.

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.

Policy and Guidance

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."*

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.

The Highland Council's (THC) 'Onshore Wind Energy Supplementary Guidance' (THC, 2016) states *"Council will expect wind energy developments to be located a minimum distance of 11 times the blade diameter of the turbine(s) from any regularly occupied buildings not associated with the development. Within a distance less than 11 times the blade diameter, a shadow flicker assessment will be required".*

Study Area and Potential Effects

The rotor diameter of the proposed turbines is anticipated to be approximately 117m. Therefore, the accepted study area based on Scottish Government and DECC guidance (ten rotor diameters) is 1.17km. This increases to 1.29km when factoring in THC's guidance on assessments being required within 11 rotor diameters.

For the Proposed Development the nearest turbine to a dwelling is located at a distance of over 3.5km (approximately 30 rotor diameters) and therefore there is no potential for any significant shadow flicker effects to occur. Therefore, shadow flicker is scoped out of further assessment within the Environmental Impact Assessment Report (EIA Report).

References

DECC- Department of Energy and Climate Change (16 Mar 2011). Update of UK Shadow Flicker Evidence Base. Prepared by Parsons Brinckerhoff.

Scottish Government (updated May 2014). Scottish Government Online Renewables Planning Advice: Onshore Wind Turbines. Available at: http://www.scotland.gov.uk/Resource/0042/00427805.pdf. Accessed on 05 February 2019.

THC (2016). Onshore Wind Energy Supplementary Guidance (November 2016, with addendum, December 2017). Available at: https://www.highland.gov.uk/downloads/file/16949/onshore_wind_energy_supplementary_guidance-_currently_adopted_suite