Glencassley Wind Farm

Scoping Report

August 2019

sse Renewables

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SSE Renewables Developments (UK) Limited, "the Developer" is preparing an application on behalf of "the Applicant", SSE Generation Ltd (SSEG), for Glencassley Wind Farm (the 'Proposed Development'), located on Glencassley and Glenrossal Estates near Lairg, Sutherland, in the Highlands. The Application will be made to Scottish Ministers under Section 36 of the Electricity Act 1989 and associated deemed planning permission sought under Section 57(2) of the Town and Country Planning (Scotland) Act 1997.

An application to construct and operate a 26 turbine wind farm and associated works on Glencassley Estate was submitted to the Scottish Governments Energy Consents Unit (ECU) in 2012 (the '2012 application'). The Highland Council North Planning Applications Committee recommended to raise no objection to this application in 2013, however, it was refused by Scottish Ministers in 2015, in respect of impacts on the National Scenic Area (NSA) and on wild land.

As the site offers excellent potential for a wind farm, the Applicant proposes to review and optimise the design, taking previous concerns into consideration to deliver sustainable, subsidy free renewable energy. Wind turbine technology has evolved significantly since the 2012 application, meaning that more productive and efficient turbines can be considered. It is proposed to relocate the development further from the north-western area of the site, towards the operational Achany and Rosehall Wind Farms (see Figure 2: Proposed Development Area). The installed capacity and turbine dimensions would be dependent on environmental and technical considerations, however, it is anticipated that the turbine tip height would be greater than 150m, delivering an installed capacity in excess of 50 MW.

An Environmental Impact Assessment (EIA) Report will be required to accompany the application for consent. This Scoping Report forms part of the EIA process and is provided to the ECU under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations) in support of a request for a Scoping Opinion.

Response to the Scoping Report

Responses to this Scoping Report should be directed to the ECU to ensure all responses are collated and included within the Scoping Opinion. Responses should be directed to:

Email: representations@gov.scot

OR

Energy Consents Unit
Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow, G2 8LU

When submitting a response to the Scoping Report, the Applicant would be grateful if you could also send a copy of your response to the address below:

Email to: murray.west@sse.com

OR

For the Attention of Murray West
SSE - 1 Waterloo Street,
Glasgow,
G2 6AY

1 Introduction

1.1 Background Information

SSE Generation Ltd (SSEG), "the Applicant", is proposing to construct a new onshore wind farm to generate renewable electricity from wind power. The proposed development is located within the Glencassley and Glenrossal Estates, situated between the River Cassley and Loch Shin near Lairg, Sutherland in the Highlands (see Figure 1: Location Plan).

The proposals for which consent under Section 36 of the Electricity Act 1989 will be sought by the Applicant, are referred to in this report as 'the Proposed Development' and are described below. The application for Section 36 consent is being prepared by SSE Renewables Developments (UK) Limited (SSE Renewables), "the Developer", on behalf of the Applicant.

An application to construct and operate a 26 turbine wind farm and associated works within the Glencassley Estate was submitted to the Scottish Government Energy Consents Unit (ECU) in July 2012 (hereafter referred to as the '2012 application'). Despite support from The Highland Council, the 2012 application was ultimately refused by the Scottish Ministers in 2015, primarily due to impacts on wild land.

As the site offers excellent potential for a wind farm development due to its wind resource and proximity to existing wind development, the Applicant proposes to review and optimise the design of the wind farm, taking into consideration concerns previously raised about the prominence and proximity of turbines in views from the nearby Assynt Coigach National Scenic Area (NSA) and to core areas of wild land. Initial site optimisation design would focus on a proposed development area to the southern end of the 2012 site, closer to the operational Achany and Rosehall Wind Farms (see Figure 2: Proposed Development Area).

Following a review of previous concerns and preliminary technical analysis, it is anticipated that an installed capacity in excess of 50 MW could be achieved in the proposed development area (see Figure 2: Proposed Development Area). This would be subject to further technical and environmental review throughout the Environmental Impact Assessment (EIA) process.

An EIA Report will be required to accompany the Section 36 Application under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ("the EIA Regulations"), as the Proposed Development comprises a wind farm with a generation capacity greater than 50 MW and for which Section 36 consent is required. It is therefore considered to fall within the definition of Schedule 2 development contained in Regulation 2(1) of the EIA Regulations. The Developer has voluntarily agreed to prepare an EIA Report in accordance with the EIA Regulations, rather than requesting a Screening Opinion. In terms of the application for Section 36 consent, deemed planning permission under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997, as amended, will also be sought.

1.2 Purpose of this Report

This Scoping Report forms part of the EIA process and is provided to the ECU of the Scottish Government under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations) in support of a request for a Scoping Opinion.

The scoping process allows statutory consultees and others to comment on the Proposed Development, the scope of the EIA and the proposed assessment methodologies. It also provides an opportunity for consultees to raise any issues that they consider to be relevant to the EIA process.

The aims of this document are to:

- set out the overall approach to the EIA;
- summarise key baseline information;
- describe the proposed assessment methodology;
- identify key potential effects at all stages of development;
- identify topics not requiring further assessment that can be scoped out; and
- describe the proposed content and structure of the EIA Report.

The document is divided into eight sections:

- Section 1: introduces the Proposed Development and provides a context for the Scoping Report;
- Section 2: summarises the consultation input;
- Section 3: describes the Proposed Development;
- Section 4: outlines the planning policy context;
- Section 5: provides information on the approach to EIA and the structure of the EIA Report;
- Section 6: details the environmental features to be assessed as part of the EIA;
- Section 7: describes those environmental features that are proposed to be scoped out of the EIA; and
- Section 8: provides a list of references.

1.3 Need for Onshore Wind in Scotland

The Climate Change Act 2008 is the basis for the UK's approach to tackling and responding to climate change. The Act commits the UK government to reduce greenhouse gas emissions by at least 80% of 1990 levels by 2050[1].

There are separate climate change policies for each devolved administration. In Scotland, The Climate Change (Scotland) Act 2009 received Royal Assent in August 2009. The Act commits Scotland to a 42% reduction in greenhouse gas emissions by 2020 and annual reductions between 2010 and 2050.

On 28th April 2019, the First Minister declared a climate emergency. Following this declaration, the Scottish Government has indicated its intent to amend the Climate Change (Emissions Reduction Targets) Bill to adopt the target proposed by the Committee on Climate Change (CCC) on 2nd May 2019 of net-zero greenhouse emissions by 2045, and increase the staged targets for 2030 and 2040.

In June 2019, the UK government committed to ambitious new targets of eradicating its net contribution to climate change by 2050. This commitment will amend the Climate Change Act 2008 and will mean the UK is on track to become the first G7 country to legislate for long term climate targets. The European Union's (EU) current commitment is for a reduction of 80-95% of 1990 levels by 2050 (European Commission, 2011).

The Scottish Government's Energy Strategy (Scottish Government 2017), sets out the target of achieving the "equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption… from renewable sources" by 2030.

In order to meet this and wider renewable energy targets to be achieved by 2030, approximately 17GW of installed capacity will be required. The Energy Strategy document recognises that onshore wind offers the

1 The Climate Change (Scotland) Act 2009, https://www.gov.uk/guidance/2050-pathways-analysis (accessed 23rd May 2019)

lowest cost renewable technology deployable at scale. As such, onshore wind will be a key part of achieving these targets.

The Scottish Government's Onshore Wind Policy Statement (Scottish Government 2017a), recognises the need to deliver new onshore wind farms subsidy free and acknowledges the technology shift towards larger turbines. This shift is also reflected in the wind turbine manufacturing industry who are now primarily producing larger turbines in excess of 150m tip height.

The Scottish Government published a Renewables Action Plan (RAP) in 2009 which sets out a framework for action in the renewable energy sector. Since its publication, the Action Plan has been updated in February 2010, August 2010, February 2011 and March 2011. Key objectives of the action plan include:

- to establish Scotland as a UK and EU leader in the field;
- to ensure maximum returns for Scotland's domestic economy; and
- to meet Scotland's targets for energy from renewables and emissions reductions to 2020 and beyond.

In June 2011, the 2020 Routemap for Renewable Energy in Scotland was launched which is an update and extension to the RAP 2009 and aims to drive forward renewables and meet the Governments green energy targets. It reflects the challenge of the new target to meet an equivalent of 100% demand for electricity from renewable energy by 2020, as well as 11% renewable heat.

1.4 The Applicant

The Applicant is part of SSE Renewables, a leading developer, owner and operator of onshore and offshore wind farms in the UK and Ireland. The Applicant operates the largest onshore wind energy fleet in the UK and Ireland, with almost 2GW of installed green energy capacity, and have developed over 1GW of offshore wind farms including Scotland's largest, Beatrice (588MW). The Applicant is committed to develop and operate further onshore and offshore wind in the UK and Ireland with a development pipeline of over 7GW.

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

SSE Renewables' Community Investment Funds support a diverse range of community projects near our renewable developments. In 2018/19, SSE Renewables provided its largest ever award, with £600,000 granted to build the Fort Augustus Medical Centre in the Great Glen, Scotland. Between its community fund programmes and its Be the Difference employee volunteering programme, which allows all employees to volunteer a working day each year, in 2018/19 SSE invested a total of £8.5m in communities across the UK and Ireland, an increase from £6.5m the year before. This brings SSE's total investment in communities over the past five years to over £30m.

To help promote opportunities more widely the Applicant hosts 'Meet the Buyer' events designed to provide an opportunity for local businesses to find out about the opportunities available within the Applicant's pipeline of projects. Initiatives such as these, demonstrate the Applicant's strong commitment to maximising the positive economic effects of its projects through local companies where possible.

2 Consultation

2.1 Scoping Stage Consultation

This Scoping Report will be issued to the following consultation bodies:

- The Highland Council (THC);
- Scottish Environment Protection Agency (SEPA);
- Scottish Natural Heritage (SNH); and
- Historic Environment Scotland (HES).

In addition to the consultation bodies above, this Scoping Report will also be issued to the following consultees:

- British Telecom;
- Civil Aviation Authority (Airspace);
- Defence Infrastructure Organisation;
- Fisheries Management Scotland;
- Friends of the Earth Scotland;
- Highlands and Islands Airports Ltd;
- Inverness Chamber of Commerce;
- Ironside Farrah (as Scottish Government's advisors on peat);
- John Muir Trust;
- Joint Radio Company;
- Kyle of Sutherland District Salmon Fisheries Board;
- Marine Scotland;
- Mountaineering Scotland;
- National Air Traffic Services (NATS) Safeguarding;
- OFCOM;
- RSPB Scotland;
- Scottish Council for Development and Industry (SCDI) (Highlands & Islands);
- Scottish Forestry;
- Scottish Water;
- Scottish Wildland Group;
- Scottish Wildlife Trust;
- Scotways;
- The Crown Estate Scotland;
- Transport Scotland;
- Visit Scotland; and
- WWF Scotland

The Scoping Report will also be issued to the following community councils and local organisations:

- Ardgay and District;
- Creich;
- Lairg; and
- Kyle of Sutherland Development Trust.

The Developer's project liaison manager will contact the MSP and local Councillors to offer copies of the Scoping Report and also in relation to Public Exhibitions or other local consultation meetings, as required.

2.2 EIA Consultation

During the EIA process, further consultation will be undertaken with consultees as required. Additional groups, organisations or individuals identified during the scoping process will also be contacted as appropriate, during the progression of the EIA.

The scoping and consultation process will be reported in the EIA Report.

Following the scoping stage, further consultation with The Highland Council and other consultation bodies will be carried out as appropriate, including the organisation of a Pre Application Meeting. This meeting will allow the Developer to demonstrate how the turbine layout and design has evolved, taking into account environmental and technical considerations, and how comments raised during the scoping process have been addressed.

A Pre-Application Consultation Report (PACR) will be prepared as a supporting document for the Section 36 application. A PACR is not formally required as part of a Section 36 application (PACR is a requirement of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 for categories of national development and major development) and is normally submitted by the Developer as best practice for both planning applications and Section 36 applications.

2.3 Public Exhibitions

Shortly after the submission of the scoping report, the Developer will offer to meet with local community councils and hold a public exhibition event locally to consult with local residents and other interested parties about the proposals. The exhibition will provide information on the Proposed Development and will provide an opportunity for members of the public to ask the project team any questions.

A second public exhibition will be held prior to submission of the section 36 application. This exhibition will provide more detailed information on the final design, key environmental sensitivities identified through the EIA process, timescales for submission and information about the next steps in the application process.

3 The Proposed Development

3.1 Introduction

The Proposed Development is located on land owned by Glencassley and Glenrossal Estates, approximately 4 km north of the village of Rosehall and 9 km south-west of Lairg within the Highland region of Scotland. The site is located in close proximity to the operational Achany and Rosehall Wind Farms.

The principal permanent components of the Proposed Development are as follows:

- wind turbines and associated hard standings;
- access tracks;
- anemometer masts or permanent LiDAR;
- interconnecting cables between the turbines; and
- welfare building and substation.

In addition to the above, it is anticipated that there would be a need for temporary development areas. These are likely to comprise: construction compound (to house site cabins and welfare facilities); a concrete batching plant; anemometer mast; and borrow pits.

3.2 Site Design

The Proposed Development would be fully assessed and optimally designed through the EIA process taking into account all environmental, technical and economic constraints. Through survey and assessment work completed for the 2012 application, the Developer is already very familiar with the site and its constraints and opportunities to optimise the renewable energy generation. Taking into consideration concerns previously raised about the prominence and proximity of turbines in views from the nearby NSA and to core areas of wild land, it is proposed that the design of the wind farm will avoid locating turbines in the north-western extent of the 2012 site boundary; instead, focus will be on land within the proposed development area to the south, closer to the existing operational Achany and Rosehall Wind Farms (see Figure 2: Proposed Development Area).

It is also proposed that existing access tracks through the adjacent Achany Wind Farm to the south of the Proposed Development would be re-used, requiring some improvements and widening.

The design of the turbine layout would take cognisance of neighbouring developments (such as the operational Achany and Rosehall Wind Farms), to ensure that the turbine dimensions, layout and overall composition, is coherent, especially when viewed from key locations, in accordance with SNH current design guidance (SNH 2017b).

The dimensions of the proposed turbines will be determined as the project design progresses, taking into account the turbines options from the wind turbine manufacturing market. At this stage it is likely that the turbines will consist of three bladed horizontal downward axis machines exceeding a blade tip height of over 150 m.

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 are likely to be semi-matt and pale grey, in agreement with the local planning authority.

Blades typically rotate in the range of 6 to 18 revolutions per minute, depending on the size of the turbine, generating power at wind speeds between about 3m/s and 32m/s (7-72 mph). When operating at wind speeds above 15m/s (34 mph), the turbines will regulate their output to the maximum level using pitch control, whereby the blades are feathered to reduce speed. At wind speeds generally greater than 32m/s (72 mph), the turbines will shut down for self-protection and will only restart when wind speed drops back below a reset value.

3.3 Site Description

The Proposed Development would be located on the east side of Glen Cassley, approximately 1.5 km from the River Cassley which runs parallel to the south-western part of the site. The river represents the lowest point within Glen Cassley where the land increases steeply in elevation to the east and west. Beinn Sgeireach (maximum height 476 m Above Ordnance Datum (AOD)) represents the highest point on site, although there are several distinct summits within the site. There are also several small hill lochs, including Dubh Loch Mor (although this is outwith the proposed development area). The site is drained by a network of watercourses, with water flowing generally in a west and south-westerly direction, draining into the River Cassley catchment.

The ground cover of the site is predominately rough grassland and heather moorland, which forms part of a Highland sporting estate. The land is primarily used for fishing, with some deer stalking also taking place. A minor road runs through Glen Cassley close to the operational Achany and Rosehall Wind Farms. There are a number of properties scattered intermittently through the Glen, with the nearest village being Rosehall which lies 4 km to the south.

3.4 Electrical Layout and Grid Connection

Turbines would be electrically connected to each other via inter-array cable circuits. A substation, which would house transformer(s) and associated switch gear, would convert the electricity generated into an appropriate voltage for onward transmission into the National Grid. It is proposed that the substation would be located within the Achany Wind Farm site, located south of the Proposed Development. The substation would form an extension to the existing Achany Wind Farm substation.

The Developer has made an application to National Grid for connection to the grid and the transmission network owner will be responsible for the design and construction of the grid connection works. Consideration of the environmental effects associated with the grid connection would, therefore, not be considered in the EIA Report for Glencassley Wind Farm but would be subject to a separate grid application.

3.5 Site Access

Access to the site would be achieved by utilising the existing track infrastructure in place for the Achany Wind Farm, which would require improvements and widening on certain sections. A 4x4 track is additionally proposed to provide a second, emergency, route of access and egress to the site from the north-west (see Figure 2: Proposed Development Area).

A review of transport routes to the site would be informed following a revised transport assessment and swept path analysis.

3.6 Project Construction

It is anticipated that the construction phase of the Proposed Development would be completed over a period of up to approximately 18 months.

A construction compound would be required during the construction phase. The construction compound 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 in this area. These would be temporary facilities for use during the construction period only.

Materials required for the construction of any new access tracks are likely to be obtained from new on-site borrow pits, or potentially from reopening of the borrow pits used previously for the construction of Achany Wind Farm. The exact location of borrow pits would be dependent upon site surveys, availability of suitable material and proximity to the required location.

All statutory legislation would be fully complied with during construction and other best practice guidance (e.g. SEPA Pollution Prevention Guidelines and Good Practice during Wind Farm Construction (Version 4), Scottish Renewables et al, (2019)) would be adhered to.

Construction mitigation and environmental protection measures would be implemented via a Construction Environmental Management Plan (CEMP). Further information on the CEMP is provided in Section 5.4.

3.7 Project Operation and Maintenance

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

3.8 Project Decommissioning

At the end of the operational lifespan, decommissioning would take place and the turbines removed, or a new application could be made to replace the turbines.

4 Planning Policy Context

4.1 Introduction

This section provides an overview of the planning policy context for the Proposed Development. A more detailed discussion and evaluation of relevant policies will be included within the Planning Statement that will be provided as a supporting document with the Section 36 Application, as discussed further in Section 5.4: Supporting Documents. An up-to-date list of relevant planning policies will be contained within the EIA Report.

4.2 National Planning Policy

National Planning Framework 3

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

Scottish Planning Policy

Scottish Planning Policy (SPP) was published by the Scottish Government in June 2014 (Scottish Government 2014b) and sets out a national policy framework for land use planning. Guidance regarding renewable energy including onshore wind farms is contained within 'A Low Carbon Place' (paragraph 161-166). This consolidated document supersedes previous Scottish Planning Policies (SPPs) and National Planning Policy Guidelines (NPPGs).

Onshore Wind Policy Statement and Scottish Energy Strategy

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

Scottish Government web-based Renewables Guidance

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

4.3 Local Planning Policy

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

Highland-wide Local Development Plan

The Highland Wide Local Development Plan (HwLDP) 2012 provides the local planning framework for the area and provides the general policy context against which the Proposed Development would be assessed. It is anticipated that the proposal will be guided primarily by the following key HwLDP policies: Policy 57 (Natural, Built and Cultural Heritage), Policy 61 (Landscape) and Policy 67 (Renewable Energy Developments).

Area Local Development Plan

The Caithness and Sutherland Local Development Plan (CaSPlan) (adopted 2018) also forms part of the development plan. It replaces the Caithness Local Plan and Sutherland Local Plan and is used to guide decisions on planning applications. It sets out the policies and land allocations to guide development over the next 10-20 years.

Supplementary Guidance

The Highland Council has also developed Supplementary Guidance (SG), of particular relevance being the Onshore Wind Energy SG (November 2016). The site lies within Group 2 (where wind farms may be appropriate in some circumstances).

5 Proposed Approach to EIA

5.1 The Overall Approach to the EIA

The EIA process enables the likely significant effects of the Proposed Development on the environment to be fully understood and taken into account during consideration of the application. The process is also used to develop mitigation measures to avoid, reduce or offset any adverse effects of the Proposed Development.

The Developer will appoint a team of independent competent experts to advise on the environmental issues associated with the Proposed Development. These specialists will work with the Developer during the design process, carry out environmental impact assessment work, and will prepare chapters for inclusion in the EIA Report.

The EIA Report will be based on the Scoping Opinion and would be prepared in accordance with the EIA Regulations, and the Good Practice Guidance published by the Scottish Government's ECU in January 2013. Consideration will also be given to advice contained in Planning Advice Note 1/2013 and Planning Circular 1/2017 (Environmental Impact Assessment), where relevant.

The EIA work will comprise a series of specialist environmental studies which will be targeted to assess any potential significant effects which the Proposed Development may have on the environment. Each topic included within the EIA process will be incorporated as a separate chapter in the main body of the EIA Report, or included as an appendix if the assessment of the subject matter requires to be more detailed.

Throughout the EIA Report, where an issue raised in the Scoping Opinion is addressed, this will be clearly referenced in the relevant chapter. A scoping matrix will also be included in the EIA Report which will detail all consultation responses received during the scoping and EIA process, with a reference to where these responses have been addressed in the EIA Report. A schedule of mitigation measures will also be included as an appendix and cross-referenced in the relevant assessment work.

5.1.1 Cumulative Effects

For the purposes of the cumulative impact assessment, the baseline for assessment purposes would include all operational wind farms, those consented or under construction, and those for which applications for statutory consents have been submitted. Consultation and discussion with The Highland Council, SNH and other bodies as required would be carried out to determine which wind farms have the potential to cause significant cumulative effects and therefore should be included within the EIA. The approach taken to identifying 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.

Other potential wind farms within the vicinity of the Proposed Development proposed for inclusion in the cumulative assessment are the operational Achany, Rosehall, Lairg, Beinn nan Oighrean, Beinn Tharsuinn, Kilbraur and Kilbraur Extension wind farms and the consented Braemore and Creag Riabhach wind farms. In 2015, a Section 36 application for Sallachy wind farm was refused at appeal, however it is understood that a new application is proposed to be submitted by the end of 2019. If this is the case, Sallachy Wind Farm would also be included in the cumulative assessment. It is not proposed to include proposed wind farm developments for which applications have not been submitted to the Local Planning Authority or Energy Consents Unit but for which a formal scoping opinion has been requested. It is considered this approach accords with the SNH Guidance on Assessing Cumulative Impact of Wind Energy Developments (SNH, 2012).

5.2 Structure of the EIA Report

It is anticipated that the EIA Report will be produced as four volumes:

- Volume 1: Non-Technical Summary;
- Volume 2: Written Statement;
- Volume 3: Figures; and
- Volume 4: Technical Appendices.

Volume 2 will include introductory chapters that describe the background and needs case for the Proposed Development, provide the relevant energy and national policy context and provide information with regard to the construction, operation and decommissioning of the wind farm.

For each of the environmental features assessed in Volume 2, the following information will be included in the respective chapters:

- a summary;
- an introduction to the environmental feature;
- scoping and consultation responses;
- assessment scope, methodology and study area;
- baseline conditions;
- impact assessment (including cumulative impacts) and proposed mitigation; and
- references.

Volume 2 will conclude with a summary chapter outlining the main committed mitigation measures and an overall summary of significance in the context of the EIA Regulations.

Where required, a confidential appendix will be prepared containing any sensitive, confidential ecological/ornithological information to be provided to the Scottish Government and SNH.

5.3 EIA Report Format

The EIA Report will be made available via the ECU's application portal. Hard copies of the EIA Report will be made available at publically accessible deposit locations, the exact details of which would be agreed with The Highland Council and ECU. Where requested, hard copies and Electronic copies will be made available to consultation bodies and consultees.

5.4 Supporting Documents

A Planning Statement will be prepared in support of the application for consent, however, as it is not a requirement under the EIA Regulations, it will not form part of the EIA Report. The Planning Statement will discuss the relevant energy and environment policies relating to wind energy development, Scottish Government's policies on renewable energy development and the Development Plan context for the Proposed Development.

A Design Statement will be prepared, setting out the design principles that have influenced and shaped the design of the Proposed Development.

A Pre-application Consultation Report (PACR) will be prepared detailing engagement regarding the Proposed Development between the Developer and local Community Councils, The Highland Council, other consultees and members of the public.

An Outline Construction Environment Management Plan (CEMP) will be provided as an appendix within the EIA Report and will contain general and best practice information applicable to the construction phase of the Proposed Development on the following subject-matters:

- Site Induction;
- Pollution Prevention;
- Site Waste Management;
- Drainage Management;
- Watercourse Crossings;
- Water Quality Monitoring;
- Excavation Materials and Reinstatement;
- Ecological (Habitats and Species) Protection;
- Archaeological Protection; and
- Environmental Incident and Emergency Response.

6 Environmental Features

6.1 Introduction

The EIA Report will provide an assessment of effects during the construction, operation and decommissioning of the Proposed Development for the environmental features described in this section.

This section provides a brief overview of the baseline conditions, the potential effects associated with the Proposed Development and the assessment methodology for each environmental feature to be considered in the EIA Report.

6.2 Landscape and Visual

6.2.1 Baseline Description

The Proposed Development lies predominately within an area of upland moorland to the north-west of Lairg between Loch Shin to the north-east and Glen Cassley to the south-west. The site occupies the south-western slopes of a long and low ridge of convex hills, which are aligned from north-west to south-east. A series of lochans occupy the troughs along the ridge and burns incise the hill slopes channelling runoff down to the River Cassley. The ground cover is predominately rough grassland and heather moorland with marsh grassland in water logged areas. The low habitat of these species ensures an open aspect across the landscape. Settlements are relatively limited due to the remote nature of the Proposed Development.

Designations

The site is not covered by any known international, national, regional or local landscape-related planning designations. However, landscape designations and other areas of varying landscape importance are present in the wider area (see Figure 3: Landscape and Cultural Heritage Constraints). This includes the Assynt-Coigach NSA which is located approximately 4.4 km to the north-west of the site boundary at its closest point.

The Proposed Development is located mostly within Wild Land Area (WLA) 34: Reay – Cassley, with the southern end of the proposed development area outwith the WLA. Although WLA's do not constitute designated landscapes, they are recognised within the revised SPP 2014 as areas of significant protection within the wind farm development spatial framework.

There are other National Scenic Areas, Wild Land Areas, Special Landscape Areas and Gardens and Designed Landscapes within the wider area.

Landscape Character

The Proposed Development is located within an area covered by the Caithness and Sutherland Landscape Character Assessment (No. 103, published 1998).

The wind turbine search area is located primarily within the Moorland Slopes and Hills Landscape Character Type (LCT). This landscape is described as comprising sloping moorland which usually undulates or gradually rises to form broad hills. The convex character of the hills tends to limit distant visibility and the variable slope of landform creates some pockets of enclosure; however, at its broadest level this landscape remains overwhelmingly open. A small area of the core development area is located within Sweeping Moorland LCT and whilst it has quite a few similar key characteristics as the Moorland Slopes and Hills LCT, principally related to their openness and peatland, they differ in relation to landform with Sweeping Moorland characterised by having a fairly flat or gently sloping landform, allowing open movement through the landscape.

Visual Amenity

There are a limited number of receptors within the immediate vicinity of the Proposed Development due to the relatively remote nature of the site. The majority of settlements, buildings, roads and recreational routes within the wider area are located in the low-lying areas. From more elevated areas, potential visual receptors are primarily recreational users accessing mountain summits.

6.2.2 Potential Effects

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

(a) Construction

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

(b) Operation

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

(c) Decommissioning

- long term effects on landscape fabric;
- temporary physical effects on landscape fabric;
- temporary effects on landscape character; and
- temporary effects on views.

6.2.3 Proposed Scope of Assessment

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

A Zone of Theoretical Visibility (ZTV) will be used to inform the LVIA. For the purpose of this scoping process, ZTVs based on initial design options and site work have been undertaken to verify the suitability of viewpoints used for the 2012 application.

The key aspects of the LVIA are set out below.

Study Area

An initial study area of between 40 and 45 km from the outer turbines would be proposed to assess the relationship between the Proposed Development and the wider area in terms of potential significant effects on landscape character and visual amenity. The initial study area would be determined once turbine height is known and would be in line with SNH Guidance 'Visual Representation of Wind Farms Version 2.2, (SNH, 2017a).

For the purpose of identifying, mapping and assessing the likely significant effects of the Proposed Development on the landscape of the site and its immediate surroundings, a 'detailed study area' from the outer turbines will be defined. This detailed study area will be informed through on-going assessment work, but is likely to be between 15 km and 20 km.

Landscape Assessment

The landscape assessment will include consideration of all nationally designated landscapes within the LVIA Study Area. More detailed assessment of effects on locally designated landscapes and LCTs will be undertaken within the detailed study area. ZTVs and field reconnaissance would inform the likelihood for significant effects to occur and those areas considered very unlikely to be significantly affected would be scoped out of further assessment. Full justification would be provided for those areas scoped out.

Wild Land Assessment

It is proposed that a separate assessment of the effects on wild land will be undertaken for inclusion as a standalone report, appended to the LVIA. This will include consideration of how the landscape effects of the Proposed Development may alter the wildness attributes of WLA 34 and a review of how / whether each of the key qualities outlined in the Wild Land Descriptions would be affected. The potential for significant effects to occur within other WLAs which lie 10-15 km from the site is considered unlikely.

The assessment will take into account the latest guidance from SNH on the assessment of effects on Wild Land Areas (Assessing Impacts on Wild Land Areas (SNH, 2017c)).

Visual Assessment

The visual assessment will be based on a series of viewpoints which are considered to accurately represent the types of views experienced within the LVIA Study Area. It is proposed that many of the viewpoints assessed as part of the 2012 application are used in the assessment for the Proposed Development, although visibility from each viewpoint will be confirmed once the layout and turbine dimensions are established. These viewpoints were previously agreed in consultation with The Highland Council and SNH.

The list of viewpoint locations proposed to be used in the assessment of the Proposed Development are detailed in Table 6.1 below and illustrated on Figure 5: Proposed Viewpoints. Some viewpoints are proposed to be included as wirelines only (no photographs) for the reasons given in the table. Viewpoint numbers listed below and on Figure 5 are retained from the 2012 application, but would be renumbered for the purposes of the EIA Report.

Table 6.1: Proposed Viewpoint List

VP No.	Location	OS Grid Reference	Distance band, direction	Reason for Selection
VP1	A836 above the Crask Inn	252292, 925057	10-15km, NE	Overlooking local stopping point on otherwise undeveloped route. Also illustrates cumulative effects
VP3	Saval	259174 908281	10-15km, E	Residential area, cumulative effect
VP5	Ben Hee	242653 933938	15-20km, E	Popular summit and Corbett, WLA 37 (Wireline only – distance means significant effects are unlikely).
VP6	Rosehall	247028 902032	0-5km, S	Small settlement close to the site
VP7	High Road	259912 904819	5-10km, SE	Representative of scattered residential properties
VP8	A836 – A838 junction	257323 909947	5-10km, E	Views from road junction. Representative of scattered residential properties
VP9	Achnairn caravan and camping site entrance	255777 912697	5-10km, E	Visitor gathering and representative of scattered residential properties
VP10	Ben More Assynt	231838 920176	10-15km, NW	NSA, WLA 34, popular summit and Munro
VP11	Glencassley road to north of Castle	243586 908748	0-5km, W	Minor road, residences nearby
VP12	Glencassley road by Langwell Hill	240663 912281	0-5km, W	Minor road

VP13	Ben Klibreck	258529 929903	20-25km, NE	Popular summit and Munro located on the edge of the SLA and within WLA 35
VP14	A838, by Broch near West Shinness	252844 915392	5-10km, NE	Road route and scattered residential properties
VP16	Minor road at Inveroykel forest access	247386 900323	0-5km, S	Road route and scattered residential properties
VP17	A836 Old Road north of Auchinduich	258227 901954	0-5km, SE	National Tourist Route, stopping place
VP19	Seana Braigh	228181 887868	25-30km, SW	AGLV, WLA 29 (Wireline only – distance means significant effects are unlikely)
VP20	Cul Mor	216209 911919	25-30km, W	Corbett in NSA, WLA 32 (Wireline only – distance means significant effects are unlikely).
VP23	Meall an Aonaich	233600, 916431	5-10km, NW	NSA, WLA 34

Some viewpoints used for the 2012 application are proposed to be excluded from the assessment for the reasons given in Table 6.2.

Table 6.2: Proposed Viewpoints to be Excluded

VP No.	Location	OS Grid Reference	Distance band, direction	Reason for Selection in 2012 Application
VP2	A836, bridge by Dalnessie entrance	257480 913947	10-15km, E	Key route (Exclude - same receptor groups as VP8 and similar distance and direction as VP9).
VP4	Rhilochan	274675 906844	25-30km, E	Scattered residential properties and cumulative effect (Exclude – distance means significant effects are unlikely, no nationally important receptor groups).
VP15	A838 Cnoc an Laoigh	249866 919210	5-10km, NE	Road route (Exclude – same receptor group and similar distance to VP14)
VP18	Can Chuinneag	248369 883333	15-20km, S	AGLV, WLA 29 (Exclude – same receptors as VP19, looks through Rosehall and Achany wind farms to site.
VP21	Creich Broch	241184 911214	0-5km, W	Glen Cassley valley, cultural heritage feature. (Exclude – cultural heritage features not within LVIA scope, very close to VP12)
VP22	SE slope, Leathad Dail nan Claibh	238952 914096	0-5km, NW	Glen Cassley valley, WLA 34 (Exclude – unlikely to be visited by visual receptors)

Assessment will also include potential effects on settlement areas and routes, including roads, railway lines and cycle routes, within the detailed study area, where potential visibility is indicated by the ZTV.

Visualisations

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

Visualisations from each viewpoint will be prepared in accordance with SNH, Visual Representation of Windfarms: Version 2.2, 2017a, with a separate set of visualisations produced to meet standards detailed in 'Visualisation Standards for Wind Energy Developments' (THC, July 2016).

Night-time Assessment

Turbines of 150m or greater tip height would require aviation lighting. An assessment of night-time impacts on landscape and visual receptors will be carried out. Supporting figures and visualisations will include: ZTV illustrating the visibility of the lighting proposed, and two photomontages from viewpoints likely to be used at night; Rosehall (VP6) and Achnairn (VP9) are proposed, to be agreed with The Highland Council and SNH.

Cumulative

In line with SNH guidance 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (SNH, 2012) the assessment will consider other wind farms within the LVIA study area including those which are operational, consented and those for which an application has been submitted but which are yet to be determined. Schemes in scoping will only be included by exception where there is specific justification for doing so. This list will then be refined to a more focussed group of cumulative sites which are considered to be most likely to be seen and experienced in combination with the Proposed Development. The final list of cumulative sites to be included in the assessment would be defined following further assessment and review of cumulative ZTVs.

Guidance

The LVIA will be prepared with reference to the following:

- Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and IEMA, 2013);
- Visual Representation of Windfarms (Version 2.2) (SNH, 2017a);
- Visualisation Standards for Wind Energy Developments' (THC July 2016);
- Visual representation of development proposals- Technical Guidance Note 02/17 (LI, March 2017);
- Siting and Designing Windfarms in the Landscape (SNH, 2017b);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, 2012);
- Assessing the Impacts on Wild Land Interim Guidance Note (SNH, 2007);
- Assessing Impacts on Wild Land Areas – Technical Guidance (Consultative Draft) (SNH, 2017c);
- The Highland Council (2011). Assessment of Highland Special Landscape Areas (THC, 2011); and
- The Special Qualities of the National Scenic Areas, SNH Commissioned Report No. 374 (SNH, 2010).

6.3 Ecology, Biodiversity and Nature Conservation

6.3.1 Baseline Description

Designated Sites

There are a number of nature conservation designated sites within 10km of the Proposed Development, as indicated in Table 6.3 (see also Figure 4: Natural Heritage Constraints), four of which are related to birds and which are considered in Section 6.4: Ornithology, of this report. Of the remaining designated sites, it is considered only two of these sites as potentially affected by the Proposed Development:

- The River Oykel SAC (which includes the River Cassley); and
- Caithness and Sutherland Peatlands SAC and Ramsar site (area includes the Strath an Loin SSSI and Gruide Peatlands SSSI).

Table 6.3: Nature Conservation Designated Sites within 10km of the Study Area.

Site Name	Designation	Size (ha)	Feature of Interest
River Oykel	SAC	960.4	Atlantic salmon, freshwater pearl mussel
Caithness and Sutherland Peatlands	SAC	142,538.7	Acid, peat-stained ponds, blanket bog, Clearwater lochs with aquatic vegetation, depressions on peat substrate, marsh saxifrage, otter
Caithness and Sutherland Peatlands	SPA	145,517	Aggregation of breeding moorland birds
Caithness and Sutherland Peatlands	Ramsar	143,502.8	Blanket bog, aggregation of breeding birds
Strath an Loin	SSSI	2,344	Blanket bog
Grudie Peatlands	SSSI	4,786	Blanket bog, breeding wader interest
Ben More Assynt	SSSI	9,118.7	Caledonian igneous caves, eutrophic lochs, oligotrophic rivers and streams, upland assemblages
Strath Duchally	SSSI	1,616.2	Blanket bog, breeding wader interest
Cnoc an Alaskie	SSSI	3,664.65	Blanket bog, breeding bird assemblage and breeding Greenshank
Kyle of Sutherland Marshes	SSSI	402.76	Flood-plain fen, vascular plant assemblage and wet woodland
Strath Carnaig and Strath Fleet Moors	SPA	14,700.61	Breeding Hen harrier
Strath Carnaig and Strath Fleet Moors	SSSI	14,703.6	Breeding Hen harrier

Previous Survey Work and Findings

Field survey work undertaken for the 2012 application between June to September 2011, identified that the area was dominated by wet dwarf shrub heath approaching favourable condition and blanket bog, equivalent to or approaching both UK BAP and Annex 1 habitat definitions. Marshy grassland was also a common habitat on the site, dominated by purple moor-grass. Less dominant habitats recorded included dry dwarf shrub heath and alpine heath. All habitats recorded were considered of local importance.

98 species of plants were recorded within the site boundary which included five UK BAP plant species: dwarf juniper, commonly found on hill summits and slopes; lesser butterfly-orchid found in wet dwarf shrub heath; alpine meadow rue and wild thyme found in unimproved acid grassland; and lesser clubmoss found in one location in marshy grassland.

Glencassley Estate manages red deer (Cervus elaphus) and sika deer (Cervus Nippon), both are common across the area with roe deer (Caprelus capreolus) present near the forest to the south. Occasional sightings and signs of fox (Vulpes vulpes) have been recorded within the vicinity of the Proposed Development and mountain hares (Lepus timidus) were present but very rarely recorded. Aquatic mammal surveys found evidence of otter in most of the permanent watercourses in the vicinity of the Proposed Development but not within the site boundary, and there were occasional records of water vole. Targeted field surveys, including the use of camera traps, recorded occasional badgers and a single pine marten, all outwith the site boundary. The cameras failed to find any evidence of wildcat in the general area. Bat activity and roost surveys were conducted in 2011. Whilst no bat roosts were found, activity surveys recorded a single common pipistrelle bat (*Pipistrellus pipistrellus*) on blanket bog habitat. Further records of single common pipistrelle and a single record of a soprano pipistrelle (Pipistrellus pygmaeus) were recorded in riparian pinewood habitat of Allt Bad an t-Sagairt. No other bats were recorded during the surveys.

One fish species was recorded during a previous targeted ecology survey: sea / brown trout. This survey identified both good and poor areas of fish habitat being present. The biggest factor affecting fish habitat was accessibility in relation to natural barriers and steep gradients. Trout are present in the Allt an Dubh Loch Bhig, Allt an Dubh Loch Mhoir, Dubh Loch Bhig and Dubh Loch Mor. Loch Langwell is stocked with trout.

Eight species of butterfly were recorded during previous surveys within the site boundary with Meadow brown (Maniola jurtina) being very common and widespread, probably reflecting an abundance of grasses, its larval food. Six species of damselflies and dragonflies were also recorded during previous surveys.

Three species of common and widespread herptiles were recorded: common lizard (Lacerta vivipara), palmate newt (Lissotriton helveticus) and common frog (Rana temporaria). Single sightings of common toad (Bufo bufo) and slow worm (Anguis fragilis) were also recorded. Despite the use of reptile boards, no other herptile records / sightings were found within the site boundary.

Watercourses within the site boundary flow into the River Cassley. Targeted aquatic surveys failed to find any evidence of freshwater pearl mussels from the watercourses in the site or immediately downstream.

More information on the previous surveys can be made available, on request.

6.3.2 Potential Effects

Potential effects which will be considered may include:

(a) Construction

- Permanent or temporary losses of habitat due to new infrastructure;
- Permanent or temporary disturbances of habitat;
- Permanent losses to protected and other animal species or their sheltering, breeding or feeding habitats; and
- Temporary disturbances affecting animals, or their habitats.

(b) Operation

- Permanent effects from loss of habitats;
- Permanent or temporary impacts from ongoing running of machinery and variations in water levels; and
- Temporary impacts from maintenance activities.

(c) Decommissioning

- Temporary disturbances affecting animals, or their habitats.

6.3.3 Proposed Scope of Assessment

An Extended Phase 1 and NVC survey will be undertaken (defined as the extent of the proposed infrastructure, buffered to 250 m). In addition, a ground water dependent terrestrial ecosystems (GWDTE) survey of the site will also be undertaken in accordance with relevant guidance.

A full protected species survey will be undertaken to allow a thorough and accurate assessment of potential impacts of the Proposed Development on protected species.

The results of these surveys will be used to inform an Ecological Impact Assessment (EcIA) of the Proposed Development in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (2016). The hydrogeology effects on GWDTE will be undertaken in accordance with SEPA LUPS Guidance Notes 4 and 31.

It is proposed to 'scope out' an assessment of all other designated sites apart from the River Oykel SAC and the Caithness and Sutherland Peatland SAC and Ramsar site and its two component SSSI's; Strath an Loin SSSI and Grudie Peatlands SSSI.

6.4 Ornithology

6.4.1 Introduction

This section sets out the proposed approach to the assessment of the potential impacts of the Proposed Development on key bird species and their supporting habitats. This project-specific approach is based on professional judgment, informed by existing bird data for the area, relevant published research, wind farm monitoring studies, and the following core guidance:

- Scottish Natural Heritage (March 2017). Recommended bird survey methods to inform impact assessment of onshore wind farms;
- Scottish Natural Heritage (February 2018). Assessing significance of impacts from onshore windfarms on birds outwith designated areas; and
- Scottish Natural Heritage (June 2016). Assessing connectivity with Special Protection Areas.

6.4.2 Baseline Description

Ornithological Designations

The Proposed Development is not located within areas of designated importance for birds; however, part of the Caithness and Sutherland Peatlands SPA, Ramsar and component Grudie Peatlands SSSI, occur adjacent to the site.

The boundary of the Caithness and Sutherland Peatlands SPA (and Ramsar) is located adjacent to the eastern edge of the site boundary. It is designated due to the aggregation of breeding moorland birds including black throated diver, common scoter, dunlin, golden eagle, golden plover, greenshank, hen harrier, merlin, red throated diver, short-eared owl, wigeon and wood sandpiper. The component Grudie Peatlands SSSI covers part of the same area as the SPA and is designated for blanket bog and breeding wader interest.

The boundaries of designated sites (relevant to ornithology) in the vicinity of the Proposed Development are included in Figure 4: Natural Heritage Constraints.

Previous Surveys and Assessment Key Findings

Intensive ornithological surveys were undertaken for two years (from April 2010 to March 2012) for the 2012 application, whereby sixty-two bird species were recorded.

The site holds breeding habitat for two wader species of high nature conservation importance, namely golden plover and dunlin. The surveys found that between five to seven pairs of golden plover and one to two pairs of dunlin bred annually within the site. The previous assessment therefore evaluated the site as being of local importance for both species.

Golden eagle, osprey, hen harrier, merlin and greenshank (all species of high nature conservation importance) were occasionally recorded, but did not breed on or within 1km of the Proposed Development. All other species of conservation importance were occasional or rare visitors to the area.

The previous assessment concluded that there would be no likely significant effects on the qualifying species of the Caithness and Sutherland Peatlands SPA and an appropriate assessment was not carried out.

More information on the previous surveys can be made available, on request.

6.4.3 Potential Effects

All relevant effects arising from the construction, operation and decommissioning of the Proposed Development on ornithological receptors, will be considered in detail within the EIA for each of the receptors. Potential effects broadly include the following:

(a) Construction

- Short-term disturbance and displacement;
- Indirect effects e.g. disruption to habitat function, effects on prey; and
- Indirect effects on designated sites.

(b) Operation

- Collision with the rotating blades of the turbines;
- Disturbance and displacement;
- Barrier effects causing disruption of flight lines due to the addition of turbines;
- Indirect effects on designated sites; and
- Indirect effects e.g. disruption to habitat function, effects on prey.

(c) Decommissioning

- Short-term disturbance and displacement.

Potential cumulative effects will also be fully considered following the approach set out in current SNH guidance and will be assessed at the scale of the Peatlands of Caithness and Sutherland Natural Heritage Zone. All relevant projects that are operational, in construction and those for which applications for statutory consents have been submitted, will be considered in the cumulative assessment.

Potential effects on designated sites will be fully considered within the EIA. However, based on the conclusions from the previous EIA, adverse effects on the qualifying features of the Caithness and Sutherland Peatlands SPA, Ramsar and component SSSI's are considered unlikely.

6.4.4 Proposed Scope of Assessment

The impact assessment will follow the standard methodology as set out by the Chartered Institute of Ecology and Environmental Management (CIEEM 2016) and relevant SNH guidance (see above). The assessment of bird collision risk will also follow current guidance as set out by SNH[2].

As previously stated, the Proposed Development Area has already been subject to detailed two year breeding and wintering bird surveys. Therefore, the existing data provide valuable background information for the design and assessment of the Proposed Development as well as for the assessment of potential effects on birds.

The following surveys will be completed to inform the iterative design and EIA process for the Proposed Development:

- Bird flight activity surveys (September 2018 to August 2019 inclusive) from suitable vantage points (VPs) recording flight time within height bands appropriate to the max/min blade swept zone of the proposed wind turbines (see Figure 6: Vantage Point Locations for the Bird Flight Activity Survey).

[2] SNH Collision Risk Modelling. Available at https://www.nature.scot/professional-advice/planning-and-development/renewable-energy-development/types-renewable-technologies/onshore-wind-energy/wind-farm-impacts-birds

- Moorland breeding bird survey: April to July 2019 survey visits using adapted 4 visit version of the 'Brown & Shepherd' (Brown and Shepherd, 1993) method; and

- Breeding raptor survey: April to July 2019, including suitable habitats up to 2 km from the proposed wind turbines (up to 4 visits, following the species-specific methods detailed in Hardey *et al*. 2013).

All fieldwork will be completed by suitably experienced surveyors following current best practice methods (i.e. as set out in current onshore wind farm EIA guidance, SNH 2017e) and will include the appropriate buffer zones outside of the proposed wind turbine areas.

It is proposed at this stage to repeat the surveys in 2020 to give two years of up-to-date baseline data. However, consultation with SNH will be sought once 2019 results are available as the combination of desk study data (including Highland Raptor Study Group and RSPB records) and the 2018/2019 results may be sufficient to meet EIA and Habitat Regulations Assessment requirements. In addition, there is significant pre-existing data from the original submission and subsequent monitoring associated with Achany Wind Farm and elsewhere.

6.5 Hydrology, Geology and Hydrogeology

6.5.1 Baseline Description

The Proposed Development is located on the east side of Glen Cassley, between the River Cassley and Loch Shin. The site is drained by several watercourses, which flow into the River Cassley; there are also several small lochs within the site area.

Designated Sites

The Proposed Development is not located within areas of designated importance of relevance to hydrology or geology, but there are several within 5 km, some of which border the eastern boundary of the site (see Figure 4: Natural Heritage Constraints). These include the Caithness and Sutherland Peatlands SAC which is designated for upland blanket bog and depressions on peat substrate, very wet mires, acid peat-stained ponds, clear-water lochs with aquatic vegetation and poor to moderate nutrient levels (as well as ornithological features). The SAC supports high quality freshwater loch habitats including oligotrophic and mesotrophic standing waters and associated vegetation. Other designations include: Grudie Peatlands SSSI and the River Oykel SAC (the River Cassley is a tributary of the River Oykel) which are designated for upland blanket bog and sensitive changes in water quality.

There are no Regionally Important Geological Sites (RIGS) or other sites of geological importance present within the vicinity of the Proposed Development.

Hydrology

Hydrologically the site lies within the catchments of the River Cassley and the Grudie Burn. The tributaries of the River Cassley that are occupied by the Proposed Development area include the Allt Langwell, Alltan Leacach, Allt Bad na t Sagairt, Allt an Rasail, Allt na Criche and Glen Rossal Burn. The watercourses located within the Grudie catchment include Loch na Fuaralaich and Allt a'Bhadain.

A review of SEPA's Indicative River and Coastal Flood Map indicates that there are a number of tributaries of the River Cassley that are at risk from the flood inundation envelope (0.5% (1:200) or great probability of flooding in any given year). Potential sources of flooding include fluvial, groundwater and artificial drainage systems.

Geology

According to British Geological Society (BGS) geological maps, the superficial geology at the site is peat with scattered exposure of Glacial Deposits. The peat comprises mainly upland blanket or eroded blanket accumulations of wet, acidic, partly decomposed peat. Glacial Deposits appear to underlie the peat across lower lying areas of the site. The solid geology is dominated by psammitic rocks (well layered metasedimentary rocks).

Peat probing carried out as part of the 2012 application indicated that peat is not extensive across the site and is generally less than 0.5 m in depth. A Peat Landslide and Hazard Risk Assessment determined that there are no high-risk areas on site but there are areas of 'medium risk'.

Hydrogeology

A review of the Hydrogeological Map of Scotland indicates that the study area is underlain by impermeable rocks, generally without groundwater, except at shallow depth. These rocks mostly comprise a Precambrian crystalline basement which offers little potential for groundwater storage and transport other than in cracks and joints which may be associated with tectonic fractures or near surface joints. The site is predominately underlain by peat or peat-rich soils, which also forms an aquifer. Groundwater within such peat aquifers is generally perched on the less permeable basement they overlie. The peat aquifers, together with the weathered bedrock zone, provide baseflow to the local surrounding watercourses. In lower lying areas of lesser relief the water table occurs at or just below the surface.

No public water supplies were identified within the catchments occupied by the Proposed Development for the 2012 application; however, a number of registered private water supplies were confirmed by the Highland Council. This will be updated for the new EIA.

6.5.2 Potential Effects

Potential effects which will be considered may include:

(a) Construction

- Excavation, removal and storage of soils and peat;
- Impacts of Erosion;
- Impacts on Surface and Ground Water Flows and Quality; and
- Impacts on Ground Conditions.

(b) Operation

- Impacts on Ground Conditions; and
- Impacts on Surface and Ground Water Flows and Quality.

(c) Decommissioning

- Impacts on Surface and Ground Water Flows and Quality; and
- Impacts on Ground Conditions.

6.5.3 Proposed Scope of Assessment

Building on existing survey data for the wider area from the 2012 application, further assessment of potential impacts of the Proposed Development on hydrology and ground conditions would be undertaken as part of the EIA, with reference to relevant legislation, policies and guidance.

The existing peat depth survey would be updated to inform the design and layout of the proposed wind farm. An approach to avoid deeper areas of peat would be adopted as part of the design process.

The peat depth survey would be undertaken to full depth and would include details of the basic peatland characteristics. The peat depth survey and associated assessment would accord to recognised guidance, in particular:

- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, Second Edition (Scottish Government, 2017b);
- Guidance on Developments on Peatland, Peatland Survey (Scottish Government, 2017c); and
- Development on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables and SEPA, 2012).

Informed by the results of the peat depth survey, a Peat Management Plan (PMP) would be developed and would include details on the likely volumes of surplus peat generated and its re-use and preventative / mitigation measures to avoid significant drying or oxidation of peat during construction. A draft PMP would be included within the EIA Report.

Watercourse crossings would be avoided wherever possible. Where this is not possible, a water crossing assessment would be provided and consultation with SEPA would be undertaken to determine whether licensing or registration is necessary under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended).

Potential impacts as a result of borrow pit workings on the water environment would be considered.

The potential for cumulative effects with other developments located within the catchment of the River Cassley and River Oykel would be considered to assess the cumulative effect on water quality, flooding and fisheries interest.

All mitigation measures would be detailed in a CEMP, and in a Pollution Prevention Plan as part of a Construction Licence application to SEPA (post consent).

6.6 Cultural Heritage

6.6.1 Baseline Description

Designated Sites

There are no sites with statutory protection within the site area.

Within a 5km radius of the Proposed Development there are a number of sites with statutory protection, including one Scheduled Monument and five category B and C Listed Buildings.

The Scheduled Monument, Creich broch, stands above the western bank of the River Cassley, approximately 2 km south-west of the 2012 site boundary. It commands wide views of the valley and the routeways through it. Previous assessment work for the 2012 application indicated the broch was in a state of disrepair and had been utilised for the sheltering of sheep in late post-medieval and modern times, leading to significant alterations to the monument.

The Listed Buildings are all located to the south of the site, along roads and within the settlement of Rosehall. Intervening rising ground and mature plantation tend to obscure views towards the site.

Archaeological Features

A walkover survey was carried out in August 2011 as part of the 2012 application, which recorded 11 heritage assets within the 2012 site boundary (both previously identified and recorded through the walkover survey). The majority of known cultural remains relate to post-medieval and modern agriculture and estate management.

There is potential for unknown archaeological remains to be present within the site, sealed below the extensive, though shallow (generally <0.5 m deep), peat cover.

6.6.2 Potential Effects

Potential effects on cultural heritage which will be considered include:

(a) Construction

- direct physical damage to or destruction of cultural heritage features.

(b) Operation

- effects on the setting of cultural heritage features.

6.6.3 Proposed Scope of Assessment

Given the surveys already undertaken within the vicinity of the Proposed Development, it is not anticipated that further field survey work would be required. Instead, known cultural heritage constraints would be ascertained through previous survey data, and an assessment of direct impacts undertaken in line with best practice.

An evaluation of the potential indirect impact (setting) on Scheduled Monuments and Listed Buildings identified by the desk-based assessment would also be carried out, if ZTV analysis demonstrated potential impact.

6.7 Traffic, Access and Transport

6.7.1 Baseline Description

The main A-class roads on the surrounding networks which may be used by construction vehicles accessing the site comprise the A9, A836, A949, A839, A837 and A838.

Access into the site would involve use of the existing Achany Wind Farm access tracks located off the A839. There are no public roads within the site. New purpose-built tracks to each wind turbine would be required.

6.7.2 Potential Effects

Potential effects of the Proposed Development which will be considered are as follows:

(a) Construction

- increased traffic flows;
- changes to the traffic composition;
- congested roads;
- journey delays;
- reduction in safety; and
- degradation of road surface.

(b) Operation

- Traffic associated with the operation of the Proposed Development is unlikely to give rise to appreciable traffic effects.

(c) Decommissioning

- Decommissioning effects are expected to be of a lower magnitude than construction effects and will result from the removal of the wind turbines from the site.

6.7.3 Proposed Scope of Assessment

An assessment would be carried out as part of the EIA to include the likely number of construction traffic movements and the capacity of local roads to accommodate delivery of turbine components and materials, following a swept path analysis. This would be completed with reference to best practice guidelines and in close consultation with The Highland Council and Transport Scotland.

Once operational, the number of traffic movements would be significantly reduced and it is anticipated that no further assessment on operational traffic movements would be required as part of the EIA.

A cumulative traffic impact assessment would be carried out, which would include all wind farm development applications in the vicinity that are likely to be approved and constructed at the same time as the Proposed Development.

6.8 Noise and Vibration

6.8.1 Baseline Description

The site is situated in a relatively remote region, with the surrounding area predominately rocky hills and moorland. The nearest residential properties are located in the valley to the west of the site where some farming and forestry operations are carried out.

Previous Survey Work and Findings

The 2012 application included an assessment of potential noise and vibration impacts associated with the construction and operation of the Proposed Development. However, the ETSU-R-97 simplified assessment did not require background noise assessments to be conducted as separation distances between the wind turbines and nearest residential dwellings were very large.

The previous noise assessment determined that although works would be audible at various times throughout construction phase, they would remain within acceptable limits. Likewise, the operational noise assessment demonstrated that the ETSU-R-97 criterion limits could be satisfied.

6.8.2 Potential Effects

Potential effects of the Proposed Development which will be considered are as follows:

(a) Construction

- Noise will be emitted from construction traffic delivering components and materials to the site, along with noise from construction works and blasting operations.

(b) Operation

- Noise will be generated by the wind turbines, usually from the blades rotating in the air and from internal machinery.

(c) Decommissioning

- Decommissioning effects are expected to be of a lower magnitude than construction effects and will result from the removal of the wind turbines from the site.

6.8.3 Proposed Scope of Assessment

An assessment would be carried out as part of the EIA, and in accordance with ETSU-R-97, to understand the likely significant construction and operational noise effects as a result of the Proposed Development on residents of nearby dwellings. The assessment will include both the predicted operational noise effects of the Proposed Development on its own, as well as its predicted contribution to cumulative noise levels when considered with other nearby wind farms.

It is anticipated that impacts from construction activities would be controlled by the adoption of best site management practices and development of a Traffic Management Plan to control the movement of vehicles to and from the site. A scheme would be submitted to the planning authority for approval of blasting details, which will outline the blasting mitigation measures. All mitigation measures would be detailed in a Schedule of Mitigation (see Section 6.12) and construction phase mitigation (including pre-construction checks) would be captured within the site specific CEMP.

6.9 Aviation

No significant impacts were assessed in the 2012 application with regards to aviation and the Civil Aviation Authority (CAA), Ministry of Defence (MoD) and NATS safeguarding raised no objections to the previous wind farm application at the site. Likewise, Highlands and Islands Airports Limited confirmed that there would be no infringement on the safeguarding surface for Inverness or Wick airports.

6.9.1 Potential Effects

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

6.9.2 Proposed Scope of Assessment

The Proposed Development is considering turbines with a tip height anticipated to be greater than 150 m) and therefore consultation with NATS, MoD, Highlands and Islands Airports Limited, other airport operators as appropriate and other stakeholders, primarily through the mechanism of the consultation procedure managed by Defence Estates Wind Farm Safeguarding, would be carried out. The consultation would be managed in two stages: the first to gather general views regarding the suitability of the site; and a further detailed consultation to determine the potential impacts on aviation issues of the final site layout.

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

The outcome of the consultation responses would be set out in the EIA Report.

6.10 Carbon Assessment

6.10.1 Baseline

A peat depth survey will be undertaken to inform the layout and design of the proposed wind farm (see Section 6.5: Hydrology, Geology and Hydrogeology). An approach to avoid deeper areas of peat will be adopted during the design process.

6.10.2 Potential Effects

Construction of the Proposed Development could potentially result in the loss of areas which may act as a 'carbon sink', where carbon is absorbed from the atmosphere, or perhaps more significantly cause a loss of carbon store material, thus releasing carbon into the atmosphere.

6.10.3 Proposed Scope of Assessment

Climate effects will be assessed for the construction and operational phases in line with current guidance, most notably:

- Scottish Government (2018) Online Carbon Calculator Tool version 1.5.1;
- Calculating Potential Carbon Losses & Savings from Wind Farms on Scottish Peatlands: Technical Note Version 2.10.0 (Scottish Government, 2016b); and
- Calculating Carbon Savings from Wind Farms on Scottish Peat Lands – A New Approach, (Nayak et al., 2008, 2010, 2011).

During the construction of the wind farm the movement of vehicles and on-site plant will generate exhaust emissions. The potential savings in CO_2 emissions due to the Proposed Development replacing other electricity sources over the lifetime of the wind farm will be reviewed.

6.11 Socio-Economic

The Applicant is already a major employer throughout the UK, including the North of Scotland, providing direct employment through the development and construction of generation or infrastructure projects. In the local vicinity this has been demonstrated through realisations of Achany, Beatrice, Gordonbush and Strathy North Wind Farm's, their associated grid connections and Loch Shin Hydroelectric Scheme. These developments have made significant contributions to the local economy.

The projected socio-economic effects of the Proposed Development would take the form of a short-term effect during development and construction through employment, spending of employees and purchase of materials and services. There will also be an opportunity for long term jobs during the operation and maintenance phases of the project, and the project would support local and Scottish supply chain initiatives. This will create jobs and leave a lasting legacy in the area as well as supporting the renewables sector as a whole.

The socio-economic benefits of the Proposed Development will be outlined in the EIA Report.

6.12 Schedule of Mitigation

A Schedule of Mitigation will be provided in the EIA Report to summarise all mitigation measures identified that are considered necessary to protect the environment prior to and during construction, operation or decommissioning of the Proposed Development.

7 Recommended Features to be Scoped Out

Assessment for the following environmental features is recommended to be scoped out of the EIA for the Proposed Development.

7.1 Forestry

There are no areas of commercial forest within the site itself, although the existing Achany Wind Farm access track passes through commercial forest and there are small extents occurring along the floor of Glen Cassley. No significant effect on commercial forestry is anticipated as a result of the Proposed Development and therefore, it is proposed that an assessment of forestry would not be required.

7.2 Air Quality

The local 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 limited to construction works of the Proposed Development (including: dust from soil stripping and earthworks, form excavation, potentially including occasional blasting, and from vehicles running over unsurfaced ground) and exhaust emissions from fixed and mobile construction plant and construction vehicles.

Construction activities also have the potential to generate dust during dry spells (such as borrow pit quarrying), which may adversely affect local air quality. Given the scale and nature of construction activities, compared with the distances between the construction areas and the nearest residential properties, it is considered that dust from construction is unlikely to cause a nuisance. Given the short term and intermittent nature of the construction period, effects on local air quality are likely to be negligible.

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.

It is therefore proposed that an assessment of air quality is scoped out of the EIA. Relevant mitigation measures for air quality and pollution control during the construction phase will be captured within the site specific CEMP.

7.3 Shadow Flicker

Shadow flicker can arise from the moving shadow of the turbine rotor blade passing over a narrow opening such as the window of a nearby residence. The likelihood and duration of shadow flicker depends upon the positioning of the sun, turbine and window locations, turbine orientation, time of day and year and weather conditions.

Shadow flicker effects may occur within ten rotor diameters and up to 130 degrees either side of north relative to a turbine.

As the nearest occupied property would be located approximately 1.5km from the 2012 site boundary, there is no potential for effects to occur and shadow flicker is therefore proposed to be scoped out of the EIA.

7.4 Ice Throw

During icing conditions there are two types of risks associated with ice collecting on turbines:

- fragments are thrown off from the operating turbine due to aerodynamic and centrifugal forces; or
- Ice falls down from the turbine when the blades are stationary.

Given the remote location of the Proposed Development, ice throw affecting members of the public is considered to be extremely low.

The low risk of ice throw is reduced further as turbines are fitted with vibration sensors, which detect any imbalance that might be caused by icing, which led to the affected turbines being shut down. In addition, public notices would be placed at access points alerting members of the public and staff accessing the site, of the possible risk of ice throw under certain weather conditions.

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

7.5 Telecommunications, TV and Radio Links

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

A previous assessment was undertaken for the 2012 application to determine the potential effect on telecommunications, TV and radio interference. The assessment identified transmitter masts, microwave links and TV signal strength in communities within the wider area. The assessment concluded that it was not anticipated that there would be any potentially significant effects on television, radio and microwave links.

Given the previous assessment findings, it is proposed that an assessment of television, radio and microwave interference is scoped out of the EIA.

7.6 Climate Change

With regard to climate change, in the context of the EIA process climate change is considered both in relation to the contribution of the Proposed Development to increasing or decreasing gaseous emissions with global warming potential (GWP), and in relation to climate change adaptation.

Emissions associated with the Proposed Development would be limited to temporary and short-term emissions of exhaust gases from vehicles and construction plant, and the potential for the release of carbon dioxide as a result of dewatering and exposing peat and peat soils during construction. Neither source is considered likely to be significant in terms of GWP.

In terms of climate adaptation, consideration would be given to the potential implications of climate change on design of turbines (e.g. design for increased flood risk and adverse weather); however, no potential for significant impacts have been identified and it is therefore proposed that an assessment of climate change is scoped out of the EIA.

7.7 Human Health

Potential effects on human health as a result of the Proposed Development could relate to noise during construction, or shadow flicker. Construction noise will be considered as part of the EIA, however, it is not considered that shadow flicker will result in a significant effect and is proposed to be scoped out of the EIA

Report. It is therefore considered that an assessment of human health will be adequately covered in the EIA and a separate assessment be scoped out of the EIA.

7.8 Risk of Major Accidents and / or Disasters

Given the nature of the Proposed Development, and its remote location, the risk of a major accident or disaster is considered being extremely low. Furthermore, the Principal Designer would need to fully assess risks and mitigate as appropriate during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015).

The peat slide risk assessment will be updated as part of the EIA Report, as detailed in Section 6.5: Hydrology, Geology and Hydrogeology.

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

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9 Glossary

Baseline
The current, pre-construction condition against which a development proposal is assessed.

Borrow pit
An area where soil, sand or gravel has been dug up for use elsewhere.

Cumulative Assessment
The assessment of effects which may occur where more than one development of a particular type combine to create a greater level of effect.

Effect
The result of change or changes on specific environmental resources or receptors.

EIA Directive
Directive 85/33/EEC (as amended) on the assessment of certain public and private projects on the environment

EIA Regulations
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

Environmental Impact Assessment (EIA)
The process by which information about the environmental effects of a project are evaluated and mitigation measures identified.

EIA Report
Document provided by the Developer to the Competent Authority, containing environmental information required under Directive 85/337/EEC, as amended.

Groundwater
Water below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

Ground Water Dependent Terrestrial Ecosystem (GWDTE)
Wetlands which critically depend on groundwater flows or chemistries. They are safeguarded by the Water Framework Directive and are sensitive to hydrological and ecological changes caused by developments.

Habitat
Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities, as used, for example in a “Phase 1 Habitats Survey”.

Hydrological
The exchange of water between the atmosphere, the land and the oceans.

Impact
Any changes attributed to the proposed development that has the potential to have environmental effects (i.e. the causes of the effects).

Listed Building
Building included on the list of buildings of special architectural or historic interest and afforded statutory protection under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 and other planning legislation. Classified categories A-C(s).

Magnitude
Size, extent, scale and duration of an impact.

Mitigation
Term used to indicate avoidance, remediation or alleviation of adverse impacts.

National Scenic Area (NSA)
Areas identified as having outstanding scenic value in a national context which should be protected in the national interest.

National Vegetation Classification (NVC)
A recognised system of classification and description of plant communities of Britain.

Phase 1
A standardised system to record semi-natural vegetation and other wildlife habitats which presents the user with a basic assessment of habitat type and potential importance for nature conservation.

Ramsar Site
Wetlands of international importance, designated under the Ramsar Convention.

Scheduled Monument (SM)
A monument which has been scheduled by the Scottish Ministers as being of national importance under the terms of the Historic Environment Scotland Act 2014.

Significant Effects
Identified environmental effects considered to be significant in terms of the EIA Regulations

Site of Special Scientific Interest (SSSI)
Areas of national importance. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species across Britain. The site network is protected under the provisions of Sections 28 and 19 of the Wildlife and Countryside Act 1981 as well as the Amendment Act 1985, the Environmental Protection Act 1990 and the Nature Conservation (Scotland) Act 2004.

Special Landscape Area (SLA)
Non-statutory designation applied by the Highland Council to areas of landscape considered to be of regional importance for their scenic qualities.

Special Protection Area (SPA)
An area designated under the Wild Birds Directive to protect important bird habitats. Implemented initially under the Wildlife and Countryside Act 1981.

Water Framework Directive (WFD)
Wide-ranging European environmental legislation (2000/60/EC) relevant to inland surface waters, estuarine and coastal waters and groundwater. The fundamental objective of the WFD is to maintain 'high status' of water quality where it exists, preventing any deterioration in the existing status of waters and achieving at least 'good status' in relation to all waters by 2015.

Wild Land Area (WLA)
Area identified by Scottish Natural Heritage through the Mapping Scotland's Wildness Project as comprising the greatest and most extensive areas of wild characteristics within Scotland.

Wildlife and Countryside Act 1981 (WCA)
Principal mechanism for wildlife protection in the UK.

Zone of Theoretical Visibility (ZTV)
A computer generated diagram which uses a 3D terrain model to indicate areas from which a development would theoretically be visible.

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Key

- 2012 Site Boundary
- Proposed Development Area

0 5 10 km

Scale: 1:250,000 @ A3

N

Figure 1
Location plan

Glencassley Wind Farm
Scoping Report

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2012 Site Boundary

Proposed Development Area

Achany Turbine Locations

Rosehall Turbine Locations

0 5 km

Scale: 1:100,000 @ A3

N

Figure 2
Proposed Development Area

Glencassley Wind Farm
Scoping Report

North - West Sutherland (NSA)

Ben Hope - Ben Loyal (WLA)

Foinaven - Ben Hee (WLA)

Bens Griam and Loch nan Clar (SLA)

Quinag (WLA)

Ben Klibreck and Loch Choire (SLA)

Assynt - Coigach (NSA)

Reay -Cassley (WLA)

Ben Klibreck - Armine Forest (WLA)

Inverpolly -Glencanisp (WLA)

Creich, Broch (SM)

Loch Fleet,Loch Brora and Glen Loth (SLA)

Rhiddoroch -Beinn Dearg - Ben Wyvis (WLA)

Fannichs, Beinn Dearg and Glencalvie (SLA)

Dornoch Firth (NSA)

Ben Wyvis (SLA)

200000 210000 220000 230000 240000 250000 260000 270000 280000 290000

950000 940000 930000 920000 910000 900000 890000 880000 870000

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Key

- 2012 Site Boundary
- Proposed Development Area
- 40 km Study Area
- 5 km Distance Radii

Landscape

- National Scenic Area (NSA)
- Wild Land Area (WLA)
- Special Landscape Area (SLA)

Cultural Heritage

- Gardens & Designed Landscape (GDL)
- Scheduled Monuments (SM)
- A Listed Buildings

0 5 10 km

Scale: 1:300,000 @ A3

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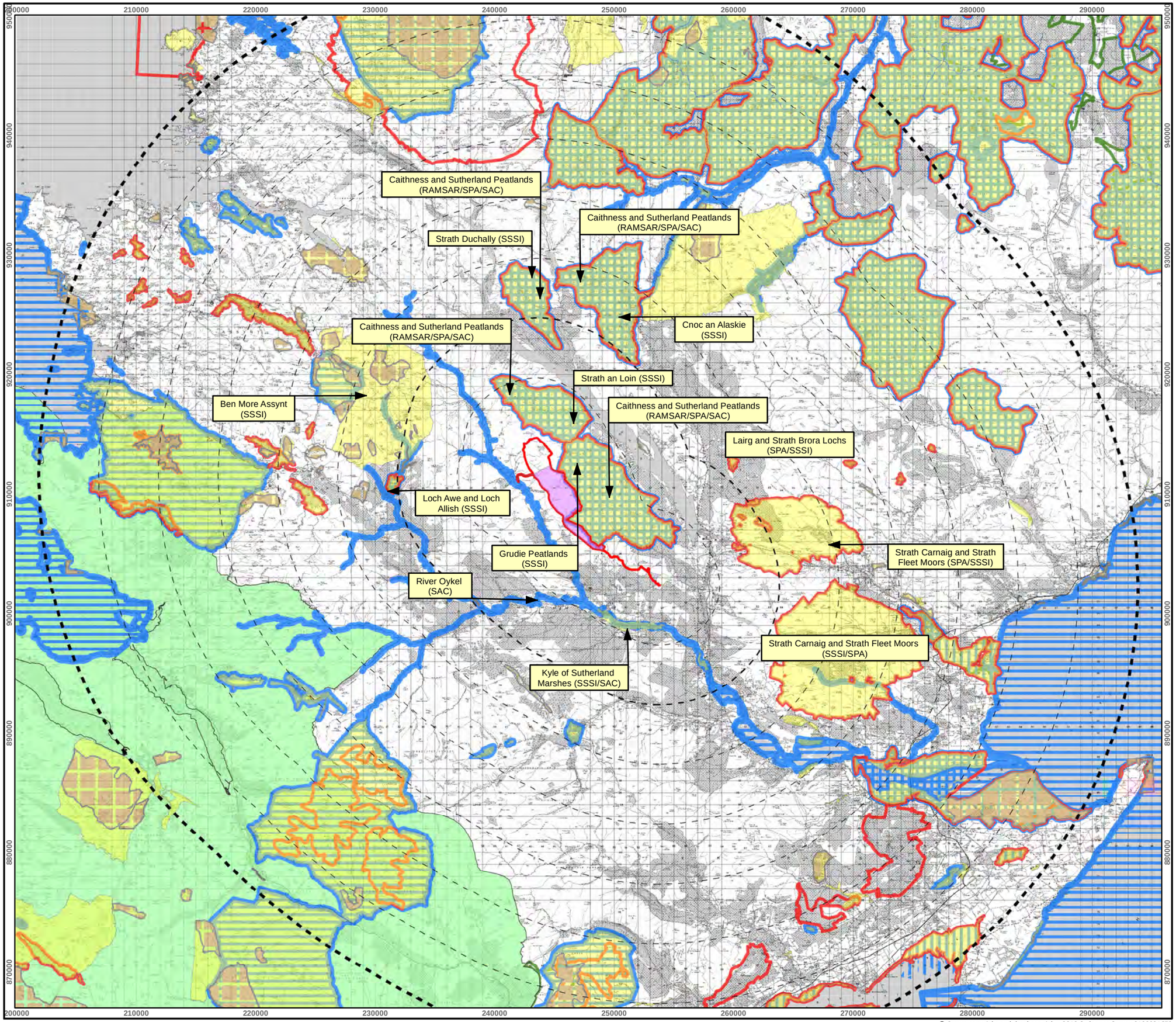
Figure 3
Landscape and Cultural Heritage Constraints

Glencassley Wind Farm
Scoping Report



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- 2012 Site Boundary
- Proposed Development Area
- 40 km Study Area
- 5 km Distance Radii

Natural Heritage Constraints

- Site of Special Scientific Interest (SSSI)*
- Special Protection Area (SPA)*
- Special Area of Conservation (SAC)*
- RAMSAR*
- Biosphere Reserve
- National Nature Reserve (NNR)
- Geological Conservation Review Site(GCR)

* Only those Sites within 10km Study Area are labelled.

0 5 10 km

Scale: 1:300,000 @ A3

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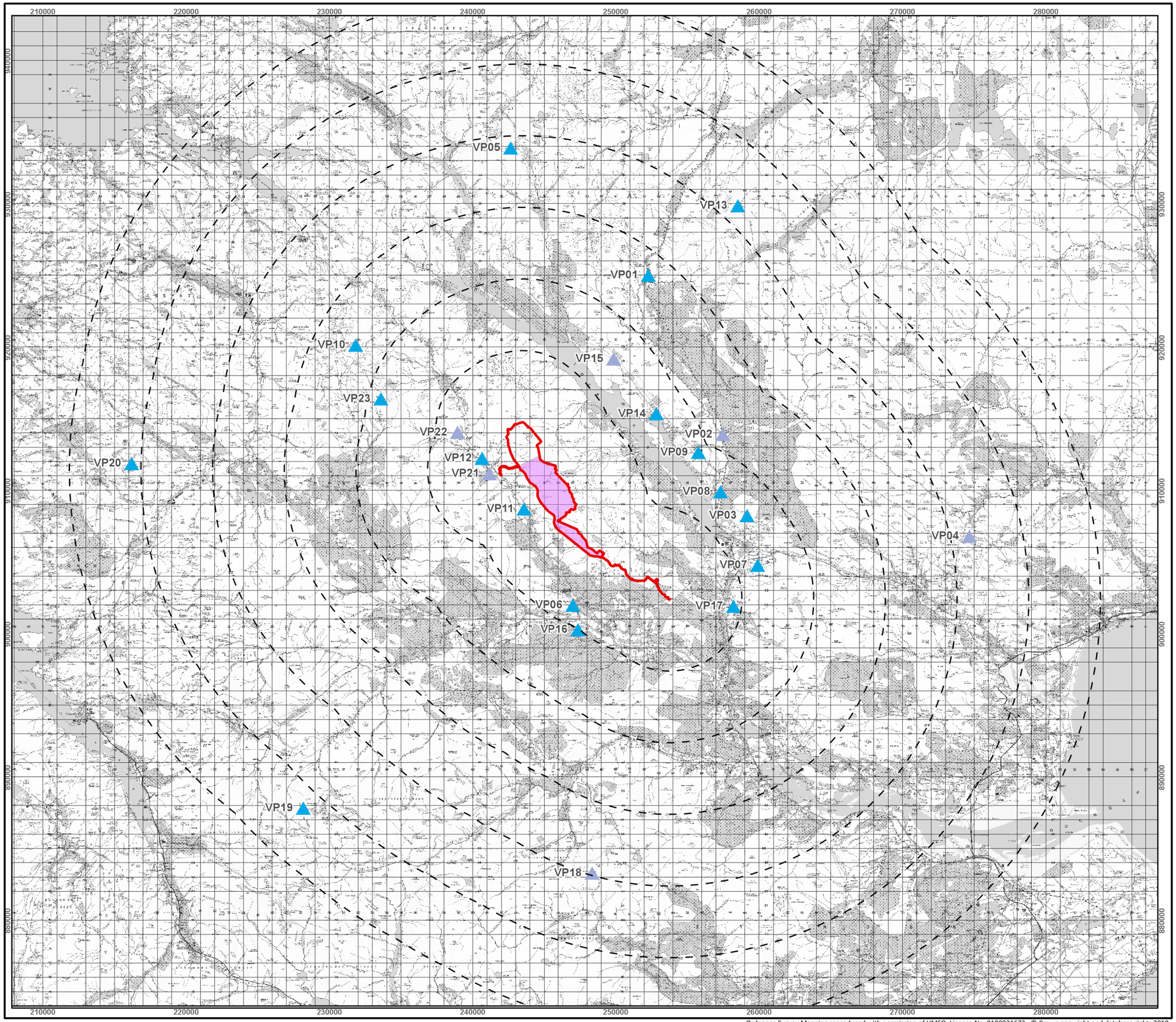
Figure 4
Natural Heritage Constraints

Glencassley Wind Farm
Scoping Report



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STEPHENSON HALLIDAY
ENVIRONMENTAL PLANNING • LANDSCAPE ARCHITECTURE

Key

- 2012 Site Boundary
- Proposed Development Area
- Distance from site (5km increments)
- Excluded Viewpoint Location
- Proposed Viewpoint Location

Proposed Viewpoints:

VP1	A836 above the Crask Inn
VP3	Saval
VP5	Ben Hee
VP6	Rosehall
VP7	High Road
VP8	A836 – A838 junction
VP9	Achnairn caravan and camping site entrance
VP10	Ben More Assynt
VP11	Glencassley road to north of Castle
VP12	Glencassley road by Langwell Hill
VP13	Ben Klibreck
VP14	A838, by Broch near West Shinness
VP16	Minor road at Inveroykel forest access
VP17	A836 Old Road north of Auchinduich
VP19	Seana Braigh
VP20	Cul Mor
VP23	Meall an Aonaich

Excluded Viewpoints:

VP2	A836, bridge by Dalnessie entrance
VP4	Rhilochan
VP15	A838 Cnoc an Laoigh
VP18	Can Chuinneag
VP21	Creich Broch
VP22	SE slope, Leathad Dail nan Claibh

0 5 10 km
Scale: 1:250,000 @ A3

N

Figure 5
Proposed Viewpoints

Glencassley Wind Farm
Scoping Report

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rps MAKING COMPLEX EASY

Key

- 2012 Site Boundary
- Proposed Development Area
- ★ Vantage Point Locations

VP Viewsheds

- 1
- 2
- 3
- 4
- 5
- 6
- 7

0 0.5 1 km

Scale: 1:40,000 @ A3

N

Figure No. 6
Vantage Point Locations

Glencassley Wind Farm
Scoping Report