

**Glendye Wind Farm Request for an Environmental Impact
Assessment Scoping Opinion**

January 2016



Glendye Wind Farm

Request for an Environmental Impact Assessment Scoping Opinion

Prepared by Coriolis Energy Limited on behalf of Glendye Wind Farm Limited

January 2016

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1.0 Introduction

1.1 Background

This Environmental Impact Assessment (EIA) Scoping Report (Report) relates to a proposal by Glendye Wind Farm Limited for the development of a wind farm (herein referred to as the Proposed Development) within the Aberdeenshire Council local authority area. This Report has been prepared by Coriolis Energy Limited on behalf of Glendye Wind Farm Limited. Glendye Wind Farm Limited and Coriolis Energy Limited will be referred to within the Report as the Development Partners.

The Report has been prepared with a view to providing structure for consultation on the approach to EIA and the work required for preparation of the Environmental Statement (ES). Comments are invited from consultees and any other interested parties. A list of those sent a copy for consultation is contained in Appendix 4.

An application under Section 36 of the Electricity Act (1989) (s36) is likely to be submitted to the Scottish Government's Energy Consents Unit in Q2 2017.

Under Schedule 2(1) of the Electricity Works (Environmental Impact Assessment) Regulations 2000 (the EIA regulations), an EIA is required to accompany the s36 application. The EIA carried out for the Proposed Development will be presented in the ES. The purpose of this Report is to consult on the scope and structure of the EIA and the information that is required to be presented within the ES.

The Proposed Development is on upland moorland plateau that forms part of the Grampian Foothills within Aberdeenshire where the local authority bounds with Angus Council. The site is located approximately 5.5km north west of Fettercairn within Aberdeenshire and 9km north of Edzell within Angus. The site location is shown in Figure 1. The Proposed Development site boundary as well as an indicative layout is shown in Figure 2.

Specialist surveyors have already been appointed to begin site ornithological, ecological, geological and access assessments. The Development Partners will appoint an independent environmental consultant to manage the EIA and produce the ES following receipt of the EIA Scoping responses.

1.2 The Application Process

New development, regardless of scale, form or use, has the potential to impact on the natural or built environment. Adopted energy and planning policy is the key regulatory framework within which determination of a wind farm application is to be made and the environmental outcomes contained within the ES need to be weighed against the economic and social aspects of development.

Schedule 9 of the Electricity Act places on the developer a duty to "have regard to the desirability of preserving the natural beauty of the countryside, of conserving flora, fauna and geological and physiological features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest". In addition, the developer is required to give consideration to National Planning Framework 3, Scottish Planning Policy, Planning Advice Notes, the relevant planning authority's Development Plans and any relevant supplementary guidance.

EIA can also determine where monitoring of impacts is required in order to demonstrate through the construction and lifetime of development that environmental impacts do not negatively impact on a locality. Where impacts are identified, processes and systems identified within the ES can be implemented through deemed planning conditions to control, avoid or mitigate any negative effects and potentially provide beneficial effects.

1.3 EIA Scoping Requirement

The Scottish Government, relevant local authorities and statutory consultees are obliged under the EIA regulations to respond to requests from developers for a scoping opinion on outline development proposals. The requirement to carry out EIA for significant onshore wind energy developments stems from this specific category of development falling within 'Schedule 2' of the EIA regulations.

In order to present this Report to the Scottish Ministers, and statutory consultees a significant body of work has already been collated to inform the EIA process. Studies and initial statutory consultee discussions commenced in 2011 (with Aberdeenshire Council, SNH and the RSPB) and having investigated a number of issues in significant detail it is now proposed to progress towards the submission of an application. While some statutory consultees have already been consulted on the outline proposals this Report has been prepared to inform and to seek opinion from other statutory consultees on the likely and potential relevant impacts/effects that the Proposed Development may introduce.

To facilitate the above, Coriolis has discussed (pre-scoping) the Proposed Development with the Scottish Government Energy Consents Unit and key consultees. This has included the submission of a Written Statement (Appendix 1) which was distributed to a targeted group of consultees in October 2015 and was followed by a meeting in November 2015, which is discussed further in Chapter 3.

The EIA should play an integral part in the design and evaluation process and is intended to enhance the environmental quality of new development and at the same time increase the sustainability of new development through:

- Identifying the key environmental issues in the preparation of development proposals;
- Examining alternative site designs;
- Identifying the environmental effects of proposed development; and
- Identifying suitable mitigation and monitoring measures.

1.4 Applicant

Glendye Wind Farm Limited is a project specific company formed by Coriolis Energy Ltd (Coriolis). Coriolis is a leading independent wind energy development company which supports operators consent and build onshore wind farms in the UK. Its principals to date have been responsible for the successful development of some 17 wind farm projects with a combined capacity of more than 400MW. These range from a two turbine 3MW project in Lincolnshire, to a 24 turbine 55 MW project in Caithness. Ten of these wind farms are already in operation with the remainder either in procurement or under construction.

Since 2007 Coriolis has achieved consent for four wind farm projects totalling in excess of 100MW and has been actively involved in other projects totalling in excess of 200MW.

Coriolis has a joint development agreement with ESB, a major utility provider in Ireland, with operational assets throughout the British Isles. Coriolis has previously undertaken projects in partnership with Falck Renewables, EDF and AG Renewables.

Coriolis Energy is active on many renewable energy policy and planning groups and is represented in all major trade associations. In addition our principals and staff have extensive experience of full EIA and some are members of the Royal Town Planning Institute (RTPI). Further background information is available at www.coriolis-energy.com

2.0 The Proposed Development

2.1 Site Location

The Proposed Development is located on the Fasque and Glendye Estate, which sits upon the south west boundary of the Aberdeenshire local authority area where this bounds Angus Council. The Proposed Development lies within the transitional area between landscape character between the lowland managed agricultural and settled landscape to the south with the Cairngorm mountain massif to the north west.

The Proposed Development is largely remote from settlements and tourist/visitor attractions. Fettercairn in Aberdeenshire lies 5.5km to the south east and Edzell in Angus is located 9km to the south west. The Proposed Development is located within The Mounth landscape character area of the Moorland Plateaux Landscape Character Type (LCT), defined within the South and Central Aberdeenshire landscape character assessment¹.

The Mounth is characterised by remote upland undulating plateaux moorland with extensive areas of conifer plantation. The project site is used mainly for grouse estate management and grazing sheep. Part of the Proposed Development access track route runs through commercial forestry plantation on lower ground.

The turbine site elevation ranges between 400m a.s.l and 540m a.s.l with the southern ridge forming the high point on site. The wider area is characterised by the hills of Clachnaben and Mount Battock to the north, the Glen Esk valley to the west and settled, more populated agricultural areas to the south and east. The wider area (within 5km of the project site) is sparsely populated and the lower ground to the south is characterised by farms and commercial forestry plantations. The nearest roads are the adopted but unclassified Glen Esk road running to the west up the valley and the B974 (the Cairn O'Mount road) to the east, which runs over high ground from Fettercairn to Banchory.

2.2 The Proposed Development

The Proposed Development infrastructure will include:

- Wind turbines and associated infrastructure;
- Site entrance and access track from the B966;
- Internal and private access road network;
- Permanent meteorological masts;
- Borrow pits;
- Transformers and underground cables;
- Sub-station building; and
- One or more temporary construction compounds.

The turbines proposed for the site would have the following physical characteristics:

- Number of turbines: approximately 40 (to be confirmed through EIA)
- Maximum Height to blade tip: up to 150m
- Individual turbine generating capacity: likely to be between 2.5 and 4 Megawatts (MW)
- Total generating capacity: likely to be between 87.5 and 140MW

The EIA will at all times adopt a precautionary approach to turbine dimensions in order to consider the worst case scenario for development impacts.

¹ Environmental Resources Management (1998). *South and Central Aberdeenshire: landscape character assessment*. Scottish Natural Heritage Review No 102.

Land use requirements during the construction phase would constitute a larger development footprint because of the need for one or more temporary construction compounds and the requirement for set down areas and crane hardstanding for turbine erection. Post construction a significant proportion of the land take would be reinstated

The main construction processes and the nature, likely source and quantity of materials used during construction will be documented within the ES. It will also provide more detailed information on the physical characteristics of the Proposed Development and the land use requirements during construction, operation, decommissioning and restoration.

2.3 Development Access

The turbine components will be delivered to site from a suitable deep port facility using the adopted road network, which in this case is likely to be Dundee. While discussion has already taken place with Aberdeenshire Council Roads regarding the feasibility of transportation routes to site from the A90 further consultation will be carried out with all relevant public bodies regarding the transportation of abnormal loads along the public highway, during EIA. Detailed traffic assessments of the proposed access route will be carried out as part of EIA.

The proposed access route from the A90 will see loads leave the dual carriageway at North Water Bridge and join the Edzell airfield road heading north for approx. 7km before joining the B966 heading east. At the Burn of Thornyhill the access would branch north and utilise a mix of widened adopted road, farm and hill roads and new access track to reach the Proposed Development site. Existing farm access and forest tracks and forest rides will be used where they are suitable to avoid further land take and disturbance to current land uses. Where existing tracks are absent new access tracks will be constructed from graded stone and these will be approximately 6m in width with suitable drainage systems in place for water run-off.

The ES will identify the preferred access route to site. The rationale and methods used to select the chosen access route will be presented within the ES. It will also set out the intended use of access routes, i.e. for transportation of turbine components or construction vehicles, delivery of construction materials, every day operational use, etc. The ES will detail which parts of the access routes are temporary in nature and which are required for the operational duration of the Proposed Development.

2.4 Grid Connection

The development of a wind farm and the generation of electricity will require a new grid connection and cabling both within and outwith the Proposed Development site in order to supply the electricity generated to the national grid.

Information on the location of turbine transformers, underground cabling to the substation (likely to be laid alongside access tracks) and a single storey substation and control building will be provided in the ES. It is likely that the individual turbine transformers will be housed outside turbine towers for health and safety reasons.

While the connection of the Proposed Development falls under a separate consent process and will be subject to a separate environmental assessment and application, where known, the impacts of constructing, installing and operating the following infrastructure components will be considered and assessed with the ES:

- Substation
- Onsite Cabling (Underground)
- Control Building

2.5 Decommissioning

The wind farm proposal will have an operational lifespan of approximately 25 years. Within the context of the deemed planning permission, should the Proposed Development be consented and built, and there is no application to extend the operational life within the 25 years consent period, there will be provision for the installation to be decommissioned and the site restored at the expiry of the deemed planning permission.

This would involve the removal of all above ground infrastructure and the restoration of the turbine foundation areas with topsoil. A decision at the time of decommissioning would be made in conjunction with statutory consultees as to whether turbine foundations would be broken up and removed or left in situ. This would primarily depend on the scale of ground impact predicted as part of complete foundation removal. The onsite access tracks would be left on site for use by the landowners.

Site decommissioning would be carried out with regard to the SNH/SKM report, *'Research and guidance on restoration and decommissioning of onshore wind farms'*, (Commissioned Report No. 591, 2013).

3.0 Environmental Impact Assessment

3.1 Project Summary

The environmental information submitted as part of an application is a key material consideration within the determination of the Proposed Development. The ES will assist Scottish Ministers to make an informed decision against the policy context.

As is standard with wind farm proposals, the shape of the final development is being developed through a series of design iterations as the site is analysed and surveyed over a period of time, in this case since early 2012. During EIA more information will be gathered to provide a better understanding of site constraints. It is expected that development design will change in form through EIA.

The EIA will cover the issues as outlined within this Report in the following format:

- The environmental opportunities and constraints;
- Appropriate alternatives;
- Construction, operation and decommissioning phases;
- Direct and indirect impacts;
- Temporary, permanent and cumulative impacts;
- Short and long-term impacts; and
- The inter relationships between the landscape and humans, flora and fauna, soils, water, air, climate, material assets and cultural heritage.

The issues which we anticipate to be the subject of EIA are considered within chapters 4 - 15 of this Report. Baseline descriptions and assessment methodology outlines are proposed for consideration by Aberdeenshire Council and statutory consultees. Sufficient environmental information will be contained within the ES in line with the appropriate guidelines or policy framework for specific issues.

The ES will detail the rationale behind the decision to progress the Proposed Development. Initially, the site was identified because of its good wind resource, lack of ecological, environmental or landscape designations, low visibility, potential access to the grid, proximity to the trunk road network and the character of the landscape; however the ES will elaborate on this process in more detail.

The ES will also consider the implications, magnitude, significance and impacts of the scale of the Proposed Development on the environment, and describe the alternative designs considered for the Proposed Development and the ways in which the final application avoided or mitigated potential impacts, where possible. The final form of Proposed Development, taking into account all known and likely environmental effects will be explained in full and in the context of EIA results, relevant policy and consultee input.

3.2 The Scoping Process

Regulation 7 of the EIA Regulations provides developers the opportunity to request a formal scoping opinion from Scottish Ministers, in order to maximise the opportunity for statutory and other consultees to contribute to the issues addressed and the assessment methodologies proposed. The scoping exercise allows Scottish Ministers and consultees to advise on what the main effects are likely to be and the topics on which the ES should focus.

The receptors that have the potential to be affected by the Proposed Development are identified at this stage in the process. This will include environmental receptors such as flora, fauna, the water environment and archaeology and also human receptors such as noise and residential amenity.

Scoping is one of the most effective means of streamlining the cost and time of application processes. If the information reported in an ES is focussed, it reduces cost for applicants in preparation of the

application; it allows consultees and decision makers to more quickly identify the key environmental impacts which will be determinative of the application.

Pre-Scoping Discussion

As part of the Scoping process Coriolis, as agents, participated in pre-scoping discussion with Energy Consents and key consultees. The discussions included the submission of a Written Statement, which is included as Appendix 1 to this Report and a separate meeting with Energy Consents and a number of the consultees set out below.

- Aberdeenshire Council (the planning authority);
- Angus Council (neighbouring authoring bounding the Proposed Development site);
- SNH;
- SEPA;
- RSPB Scotland;
- Cairngorms National Park Authority;
- Marine Scotland
- Dundee City Council (for Access reasons); and
- Transport Scotland (for Access reasons).

In addition to providing details relating to the site and an overview of the Proposed Development, the report also identified what are likely to be the key issues associated with the site including landscape and visual impacts, as with any wind farm development and the potential impact on carbon rich soils and priority peatland habitats, ornithology, the road network and defence interests. A number of the Consultees provided a response to the Written Statement, these are included as Appendix 2 to this Report.

Following submission of the Written Statement a meeting was held with Energy Consents and a number of the consultees mentioned above. During the meeting Coriolis Energy delivered a presentation which provided further information on the content of the Written Statement. This was followed by a round table discussion. Minutes of the meeting and subsequent amendments are contained in Appendix 10.

3.3 Baseline Assessment

The baseline assessments will clearly set out a description of the environmental features of the Proposed Development site. The different assessments used to determine current baselines will be specific to the environmental issues being considered and the practicalities of assessment of impact.

Scoping hopes to establish with statutory consultees that the type and scale of assessments proposed in the Report are suitable and conform to the requirements of all relevant bodies. While we have attempted to propose assessment procedures that embody correct relevant information, where we have overlooked specifics that consultees think need to be considered we would welcome further input.

3.4 Assessment Methodology

Assessment methodology for each issue aims to demonstrate in an objective manner the likely impacts of the wind farm on these features, and the measures used to prevent, mitigate and where possible offset any significant effects on the environment. It will incorporate details of the arrangements and the methodologies to be used in monitoring such potential impacts, including timing and arrangements for reporting monitoring results. In addition, it will note, where possible, whether measures could themselves have secondary or indirect impacts on the environment.

The assessment and verification of baseline studies, environmental considerations and potential impacts or mitigation will be carried out by personnel or consultants with suitable expertise and experience. The assessment of certain aspects of environmental effect caused by wind farm development requires the involvement of specialised professionals and for the Proposed Development a number of people from different disciplines will be involved in the production of the EIA.

The use of qualified environmental specialists to predict and evaluate the environmental impacts and advise on suitable mitigation, where necessary, will avoid the submission of non-compliant information to statutory consultees.

3.5 Assessment of Effects

The primary purpose of the ES is to demonstrate both the direct and indirect effects of a development on the environment throughout construction, operation and decommissioning.

Quantified forecasts will detail the processes involved in assessment, the magnitude of change predicted, the justifiable reasons for conclusions and the assumptions that have been used within predictions.

3.6 Significance Criteria

The ES will not only outline where impacts are likely but also the significance of effect. It is recognised that these effects can range from international to local, positive to negative, temporary or permanent and intermittent to continuous.

The nature and extent of the impacts associated with or introduced through development will largely define the likely significance of impact, depending on the magnitude of change and the sensitivity of the receptor in question. Assessment of change and the elements or data used to predict the level of change will be based on quantifiable sources of information and clearly defined professional input. The ES will provide clear statements on the significance of effects and will distinguish between the nature, extent and magnitude of physical changes.

3.7 Potential Mitigation

Where the impacts identified through development are likely to impact on recognised environmental quality standards or the ES advises adoption of the precautionary approach or there are uncertainties regarding specific impacts in terms of nature, magnitude and level of impact, and where these cannot be avoided by design, mitigation measures will be proposed within the ES. Appropriate consideration will also be given to the monitoring of development post consent through construction, operation and decommissioning. The ES will address pollution risk and identify all potential pollution risks associated with the proposal, identifying preventative measures and mitigation.

At this stage mitigating measures for the Proposed Development are already being considered based on the Development Partners experience elsewhere and recognised best practice. The ES will explain the type, scale and timing of mitigation measures proposed to minimise any adverse environmental impacts.

The Proposed Development footprint of the infrastructure required is relatively small in terms of the overall land area contained within the project site boundary. It is therefore possible to reduce direct impacts on physical aspects such as ecological or hydrological areas of sensitivity through the design and location of development infrastructure.

The ES may identify that certain areas within or outwith the site boundary require to be managed as part of mitigation for potential impacts on ornithology or ecology. Similarly, it may propose that the

loss of some areas may need to be compensated for on other areas. A draft Habitat Management Plan (HMP) will be submitted alongside the ES.

3.8 Non-Technical Summary (NTS)

The NTS will be written in concise non-technical terms to summarise the main environmental issues associated with the Proposed Development. It will provide plans of the Proposed Development, summarise the assessments that have been carried out as part of EIA and outline clearly the potential significant adverse impacts which could result from the Proposed Development and proposed mitigation measures.

4.0 Planning Policy

4.1 Introduction

This ES Chapter will cover the relevant planning and renewable energy policies, government guidance and supplementary documents that relate to the Proposed Development.

Assessment of the wind farm will take into consideration the National Planning Framework 3 (NPF3) and Scottish Planning Policy June 2014 (SPP) on renewable energy, other relevant national planning policy and guidance, Planning Advice Notes (PANs), the extant Development Plan and Aberdeenshire Council supplementary guidance. This section outlines the key policy documents against which the Development is likely to be assessed. As a s36 project the Proposed Development would fall to be determined against national policy, the existing Development Plan and the emerging Local Development Plan (LDP) (each of which is discussed below) and also take into account the views of key statutory consultees. While the project is expected to be determined at a national level, local policies remain an important consideration in the determination process. The ES will document the full suite of Aberdeenshire Development Plan policies against which the proposal will fall to be assessed. The application for the Proposed Development will be supported by a Planning Statement and a Design and Access Statement.

Aberdeenshire Council are currently in the process of preparing an updated LDP. At the time of preparing this Report the Proposed Aberdeenshire LDP had been formally submitted to Scottish Ministers in accordance with Section 19(1) of the Planning etc (Scotland) Act 2006, with formal adoption expected at the start of 2017. It is therefore possible that the Proposed Development would fall to be determined against the emerging policy context as opposed to current Development Plan policy.

4.2 Climate Change

Climate change is one of the most serious threats facing the modern world. UK policy on renewable energy generation is primarily guided by the Government's commitment to international and European climate change, carbon emission and energy security targets.

There are numerous international, European and national policy directives that envisage a greener, cleaner and more sustainable future. Renewable energy frameworks are a key component of all international visions. UK policy guidance highlights the potential of renewable energy sources to contribute towards targets to reduce greenhouse gas emissions. Many international countries have both formal and informal targets for increasing renewable energy generation and reducing CO₂ emissions. Most highlight that targets on paper are not caps, will inevitably be reviewed upwards and should, where possible, be exceeded.

The issues of climate change, renewable energy generation and CO₂ emissions have become increasingly important in national planning policy. One of the primary aims of the UK national government is to move the UK towards a low carbon economy. This relates to all sectors of business and industry and all policy frameworks that affect the general public. In business and the public sector this includes the Carbon Reduction Commitment and the Climate Change Levy, in energy intensive industries it includes the EU Emissions Trading Scheme and the UK's Climate Change Agreements, in small business it includes energy efficient Building Regulations and in energy supply it includes the Renewable Energy Strategy.

Following the adoption of the Kyoto Protocol in 1997 the UK Government agreed upon a 12.5% reduction in CO₂ emissions, and set a domestic target to reduce CO₂ emissions by 20% by 2010. More recently, in December 2015 at the United Nations Climate Change Conference in Paris, the 196 parties

who attended the summit agreed on a long term goal to keep the increase in global average temperatures to well below 2°C above pre-industrial levels.

The UK's Renewable Energy Strategy (RES) was launched in July 2009 and outlines how the UK aims to generate 15% of its energy (including electricity, heat and transport) from renewable sources by 2020. This strategy has a number of objectives which include reducing carbon emissions, decreasing reliance on fossil fuel imports and developing a sound economic foundation in renewable energy development and operation.

4.2.1 Scotland

The Climate Change (Scotland) Act (2009) has established a framework to reduce greenhouse gas emissions in Scotland, beyond the scope of the Kyoto Protocol. The provisions in the Act set a long-term target to reduce Scotland's emissions of Kyoto Protocol greenhouse gases by at least 80% by the year 2050. This long-term target is supported by a 2020 interim target of 42% by 2020. The Act confers power on Ministers to impose climate change duties on public bodies to make further provision with regard to mitigation of climate change and the move towards a low carbon economy.

In June 2011 the Scottish Government unveiled plans to meet 30% of the country's energy needs from renewable sources by 2020. This builds on the 2009 Scottish Renewables Action Plan. The targets include ambitions to generate the equivalent of 100% of Scotland's electricity needs from renewables by 2020 and reflect the government's commitment to create a sustainable and energy self-sufficient Scotland.

4.3 National Planning Policy

The national planning context for renewable energy and wind farm development changed in February 2010 with the introduction of SPP. While the NPF is the Scottish Government's Strategy for Scotland's long term spatial development, SPP is a statement of Scottish Government policy on land use planning. At present both of these documents are the subject of review and revised documents are likely to be published in summer 2014.

SPP sets out Scottish Government policy on nationally important land use planning matters and is intended to provide a more coherent and focused statement of national planning guidance compared with the strategic spatial vision of the NPF.

The ES will take into consideration the national policy content of the following at the time of drafting:

- NPF3
- SPP2
- Web based renewables advice
- PAN 1/2013 Environmental Impact Assessment
- PAN2/2011: Planning and Archaeology
- PAN 50: Controlling the Environmental Effects of Surface Mineral Workings
- PAN51: Planning and Environmental Protection and Regulation
- PAN56: Planning and Noise
- PAN58: Environmental Impact Assessment
- PAN60: Planning for Natural Heritage
- PAN 61: Planning and Sustainable Urban Drainage Systems/ PAN 79 Water and Drainage
- PAN68: Design Statements
- PAN73: Rural Diversification
- PAN75: Planning for Transport

- PAN 1/2011: Planning and Noise
- Pan 3/2010: Community Engagement
- Pan 84: Carbon Reduction
- Designing Places: A Policy Statement for Scotland
- A Policy on Architecture for Scotland

At present SPP sets out the Scottish Government's policy framework for renewable energy and is a transitional link between the aims of national energy policy and the content of local authority Development Plans.

In reference to wind farm development SPP instructs planning authorities to support the development of wind farms in areas where the technology can operate efficiently and where the impacts on communities and the environment can be satisfactorily addressed. It also sets out that local authorities should adopt frameworks that promote and encourage renewable and low-carbon energy generation.

SPP instructs local authority Development Plans to set out the potential for wind farm development in their area and specify the criteria that needs to be considered in determining applications. SPP details that planning authorities should set out a spatial framework for onshore wind farms. SPP also stipulates that planning authorities should not make assumptions on technical constraints when formulating wind farm spatial frameworks within renewable energy policy.

The primary conclusion that can be derived from national planning policy guidance is that wind farm developments will be supported and welcomed in Scotland if compliant with the relevant Development Plan policy and assessment criteria. It is also concluded from national planning policy guidance that the expansion of renewable energy development across Scotland cannot be to the significant detriment of local communities or the environment.

Renewables Action Plan

Scotland's Renewables Action Plan (published 2009, latest update 2011) seeks to drive forward the development of renewable energy to capitalise on Scotland's natural resources to gain maximum economic benefit. It sets out a framework for action in the different fields of renewable energy generation, identifying what needs to happen and by when to help achieve national targets and objectives.

In relation to onshore wind, the Action Plan aims to support the development of onshore wind farms in locations where it is environmentally acceptable. It requires that development proposals demonstrate net sustainability and address significant environmental sensitivities and carbon issues associated with forested and peatland sites.

The 2020 Routemap for Renewable Energy in Scotland

The 2020 Routemap for Renewable Energy (first published 2011, latest Update 2015.) in Scotland reflects the challenge of the Scottish Government's target to meet an equivalent of 100% demand for electricity from renewable energy generation by 2020 with an interim target of 50% to be met by 2015 (identified in 2012).

Summary

The ES will at a minimum take into consideration the national policy content of the following at the time of drafting:

- NPF3
- SPP

- Specific Advice Sheet — Onshore Wind Turbines
- Specific Advice Sheet - Developments on Peat Land
- PAN51: Planning and Environmental Protection and Regulation
- PAN60: Planning for Natural Heritage
- PAN68: Design Statements
- PAN73: Rural Diversification
- PAN 75: Planning for Transport
- PAN 1/2011: Planning and Noise
- PAN 2/2011: Planning and Archaeology
- Pan 3/2010: Community Engagement
- PAN 1/2013: Environmental Impact Assessment
- Pan 84: Carbon Reduction
- Designing Places: A Policy Statement for Scotland
- A Policy on Architecture for Scotland
- The UK Low Carbon Transition Plan (July 2009);
- The UK Renewable Energy Road Map (September 2015); and
- The UK National Infrastructure Plan (November 2011)

4.4 Development Plan Policy

The Development Plan currently consists of the:

- Aberdeen City and Shire Strategic Development Plan (SDP), adopted in March 2014
- Aberdeenshire Local Development Plan (LDP) Adopted in 2012.

Policy guidance for wind farms is included in the LDP countryside policy 'SG Rural Development 2: Wind farms and large wind turbines'. This states that wind farms will be approved subject to being acceptable in the following respects:

- No significant adverse effect on Residential amenity
- Set back from roads and railways
- No adverse impact on aviation
- No significant impact on tourism or recreation
- Cumulative visual impact

In terms of identifying 'Broad Areas of Search' in line with the requirements of the previous SPP the LDP states *"We have been unable to identify any areas which could accommodate wind farms greater than 20MW, but this does not mean to say that wind farms of this scale could not be considered."*

4.5 The Proposed Aberdeenshire Local Development Plan 2016 - Shaping Aberdeenshire

The Proposed Aberdeenshire Local Development Plan was approved as the settled view of the Council on 12 March 2015. This followed a process of engagement and included consultation on a Main Issues Report in 2013. The plan was published for formal representation on the 28 March 2015. Coriolis provided consultation responses to both of these.

Our response to the Proposed Plan suggested re-wording of Policy C2 – Renewable Energy to ensure that the policy support provided for mitigating the effects of climate change by ensuring the deployment of renewable energy is fully realised.

The Proposed Development is at present partly within 'an area of significant constraint' as detailed within the spatial strategy due to the presumed presence of carbon rich soils and priority peatland

habitats (a Group 2 constraint as detailed within SPP) and the remainder is identified as an 'area where planning constraints are less significant'.

As discussed, the Proposed LDP is currently being considered by Scottish Ministers. The Development Plan Scheme 2015 currently anticipates adoption of the LDP in October 2016.

5.0 Landscape and Visual

5.1 Introduction

The Landscape and Visual Impact Assessment (LVIA) will be completed in accordance with the relevant best practice documents. It will consider not only the scale and proposed location of the turbines but also the other development components - the access tracks, substation, transformers and any other physical infrastructure, such as borrow pits.

The LVIA will consider the effects on landscape character and visual receptors within a defined study area. SNH has published a number of documents that refer to landscape and visual assessments of wind farm proposals and the LVIA will be completed in accordance with the methodology and requirements set out in these documents.

There are no national landscape designations on or within 9km of the site. The site constitutes high plateaux moorland used for grazing, shooting and stalking. The wider area is characterised by the foothills, commercial forestry and various agricultural areas (both arable and livestock) are scattered throughout the Estate.

In terms of visitor attractions (important in this part of Aberdeenshire), it is anticipated that the site would have very little visibility from the Cairngorm National Park (some 12km distant) or Mount Keen (the nearest Munro 17km away) and largely shielded from the Cairn O'Mount viewing platform.

A zone of theoretical visibility (ZTV) for the indicative layout is shown in Figure 5.

5.2 Study Area

The study area for landscape and visual impact assessment will cover a radius of 40km from the site boundary. This follows the guidance set out in 'Visual Representation of Wind Farms (SNH) (2014), which sets out that 40km is considered to be the maximum radius within which significant visual effect could occur based on the size of the turbines considered as part of the Proposed Development.

The study area would therefore include as far north as Aberdeen, and parts of the Cairngorm's National Park down to the Aberdeenshire and Angus coast to the south, including Forfar. It would also extend from Glendoll Forest in the west to Stonehaven in the east.

Figure 2 details the Proposed Development site. Within this the Proposed Development footprint would be concentrated on the upland moorland plateaux areas.

5.3 Baseline Description

The landscape assessment will consider the effects of the proposed wind farm on the existing landscape character, pattern of land and the rural and urban elements within the study area. The visual assessment will concentrate on the areas closest to the proposed wind farm site, i.e. visual impact effect from receptors within 10km of the site boundary. This is where it might be expected that the Proposed Development may impact more on receptors. It will also consider the visual impact of the Proposed Development over a larger area and the magnitude of visual impact from nearby villages and settlements, roads and public places of interest.

The Proposed Development site is defined in landscape character terms as Moorland Plateaux Landscape within the '1998 South and Central Aberdeenshire: landscape character assessment' produced by Environmental Resources Management on behalf of SNH.

The 1998 study sets out that the Moorland Plateaux is '*typically covered by either heather moorland or coniferous woodland which forms vast cloaks over the hills and ridges*'.

The Proposed Development site is detailed as falling within 'The Mounth' landscape area within the Moorland Plateaux Landscape. This is noted as being the largest expanse of Moorland Plateaux within the Aberdeenshire area with its southern edge marking the line of the Highland Boundary Fault (HBF). It details that *'the plateau itself is covered by a pelt of heather moorland which extends westwards into the Cairngorms revealing a strong, rolling relief whose ridges recede into the distance across interlocking horizons. The plateaux is an exposed and wild landscape, but rarely inhospitable enough to escape human influence.*

In 2013 SNH and Aberdeenshire Council appointed Ironside Farrar to complete a landscape capacity study for wind turbines. The key purpose of the study was to set out, in landscape terms, detailed guidance on the capacity of different landscape areas to accommodate wind farm/turbine Proposed Development, in order to inform the Council's LDP spatial framework for onshore wind.

Within the final 2014 study the site falls with the Moorland landscape area. The Moorland landscape area in Aberdeenshire accounts for nearly 25% of total landscape cover. It experiences high wind speeds and has the lowest population levels. Setting aside the areas within the Moorland that are protected by formal designations (SACs, SPAS, SSSIs, NNRs, Ancient Woodland, etc.), and accommodate sensitive built and cultural heritage features, Aberdeenshire Council's spatial framework should identify Moorland as having potential for wind energy development subject to compliance with detailed LDP and national planning policy criteria.

The Executive Summary to the report states that the Aberdeenshire landscape is special and should be afforded an elevated level of protection (from wind energy development) in comparison with other Scottish local authority landscapes, stating, *'the particular characteristics of Aberdeenshire mean that there is no scope for the larger scale of windfarm development seen elsewhere in Scotland'.*

It details that the Moorland Plateaux landscape character area has no capacity for wind turbine development over 15m in size. The justification for stipulating that the Aberdeenshire landscape should be treated differently to other local authority landscapes and that areas are unsuitable for wind farm development without any reference to the SPP spatial policy framework is not clear.

The landscape capacity study goes on to note that, *'in contrast with much of Scotland there is no capacity for wind turbines in the highest moorland areas, beyond a domestic scale (less than 15m in height), due to the high visual sensitivity and landscape value of these areas within Aberdeenshire'.* In reference to the Moorland Plateaux LCAs this relates to, *'their importance to the Aberdeenshire landscape, high visual prominence, high relative wildness and recreational value'.*

The study highlights that Moorland Plateaux, aside from its south and east facing slopes, is of *'the lowest visibility in terms of development and this area would generally not be visible from settlements within a distance of 15km, reflecting the low population within this area'.* Likewise section 4.2.2 finds the same is found for visual impact from routes and the study details that the least visible areas from viewpoints lie within Moorland areas.

The study sets out that, *'the least visible areas may have capacity to conceal turbines or site them away from most receptors'.* The study details that, in terms of visibility the area of lowest visibility is the Moorland Plateaux (because of distance from population centres and transport routes) but counters this by detailing that it forms a backdrop to the agricultural/settled areas of Aberdeenshire and is in the foreground of views from the National Park.

The study notes that Moorland has no capacity for further wind energy development. Kildrummy (operational, consented at appeal), Clashindarroch (operational, consented by Aberdeenshire Council), Mid Hill & Mid Hill II (operational, s36 applications with no objection by Aberdeenshire Council), Meikle Carewe (operational, consented at appeal) and Glens of Foudland (operational, consented by Aberdeenshire Council), are all located within the Moorland landscape character type.

It is envisaged that the cumulative context within the vicinity of the Proposed Development site will continue to evolve throughout the project towards the projected submission of the application in spring 2017 and it will be important to consider any proposal for the development site in light of the most current cumulative baseline, particularly in relation to potential cumulative effects upon the HBF as noted by SNH during pre-scoping discussions.

Visual Receptors

The nearest major road, the A90, lies approx. 12km southeast of the Proposed Development site and is the closest trunk road within the study area. The closest rail line is the Dundee to Aberdeen east coast line which lies at its closest point 13km to the south east. The closest National Cycle Route is route 1 and route 76 'Coast and Castle North' which connects Edinburgh and Aberdeen. The closest Long Distance Route (walking route) within the study area is St Duthac's Way which is located 18km to the south east at its nearest point. There are a number of popular local walks which will be assessed as part of LVIA, i.e. the Clachnaben hill walk and Mount Battock.

There are several landscape designations within the study area. The Cairngorms National Park is located 9km to the northwest at its closest point, with two designated NSAs within the Park – Deeside and Lochnagar (approx. 26km west) and the Cairngorm Mountains (approx. 43km north west). The nearest area of Wild Land, as proposed by SNH and the Scottish Government, is located 12km to the west.

5.4 Design Consideration

The design of onshore wind farms is continually developing and the Proposed Development will aim to achieve a coherent and structured form, in line with SNH's guidance on Siting and Designing Windfarms in the Landscape. The ES will contain the rationale behind the final design strategy.

The information presented within the ES will be accompanied by a Design and Access Statement that will form part of the material submitted with the application. The Statement will identify a clear strategy for the final layout and evidence that the design ideas have been tested against objectives.

The final layout will be influenced by a qualified Landscape Architect to ensure an appropriate landscape and visual fit in terms of LVIA. The objective will be to propose a final fit design that accords with its setting in terms of a pattern, attempts to avoid the clustering of turbines and the isolation of outlying turbines from major viewpoints.

All elements of the proposed wind farm infrastructure will be considered in terms of locational and design choice and the LVIA will set out how design has evolved to minimise visual impact, especially from nearby and sensitive visual receptors.

Pre-scoping discussion comments from SNH advised that 150m tip heights may not be acceptable within the landscape setting, however, due to the energy yield and climate change benefits larger blades have, we feel it is appropriate to fully assess the impacts of this typology through EIA rather than presupposing that unacceptable impacts will arise.

5.5 Assessment Methodology

The assessment methodology will follow the approach promoted by the Guidelines for Landscape and Visual Impact Assessment (GLVIA3), Landscape Institute and the Institute of Environmental Management and Assessment (2013). General guidance on the range of issues to be considered in assessment of wind farms is set out, in the form of a scoping checklist, at Appendix 1 of 'Guidelines on the Environmental Impacts of Wind Farms and Small Scale Hydroelectric Schemes' (SNH 2001). The 2007 SNH guidance developed jointly by SNH and Scottish Renewables, 'Visual Representation of Wind Farms – Good Practice Guidance' will also be referenced and used where relevant. Altogether the following best practice guidance will be referred to in the course of the study:

- Siting and Designing Windfarms in the Landscape Version 2, SNH 2014;
- Visual Representation of Windfarms - Good Practice Guidance, SNH 2014;
- Assessing the Cumulative Impact of Onshore Wind Farm Developments, SNH, March 2012;
- Use of Photography and Photomontage in Landscape and Visual Assessment, Landscape Institute Advice Note, 01/11;
- Landscape Character Assessment, The Countryside Agency and Scottish Natural Heritage (SNH) 2002;

The LVIA will assess the potential direct and indirect effects of the Proposed Development on landscape designations, landscape character, prominent receptors and the wider environment. Assessment will be focused within the 40km radius study area, where it is considered that potential significant landscape and visual effects are most likely to occur. These will include:

- Landscape character types (areas as identified in the relevant SNH or Aberdeenshire Character publications);
- Landscape-related planning designations at both the national, regional and local level (including the Cairngorms National Park, NSAs, Wild Land, Special Landscape Areas and Gardens and Designed Landscapes);
- Settlements;
- Railways, major roads, walking routes and cycle routes; and
- Public areas of interest such as visitor attractions, viewpoints, hill walks, Country parks and tourist facilities.

With respect to designations with a landscape and cultural heritage facet, for example listed buildings, scheduled ancient monuments, historic parks and gardens, the integrity, aspect and setting of each receptor will be assessed.

The LVIA will present the baseline conditions in a comprehensive and transparent manner and will refer to the landscape character information in the public domain. It will also highlight the other important aspects of landscape and visibility within the wider study area.

The predicted magnitude of visual change on any receptor will be assessed using information gathered through site visits and photo assessment and portrayed using wireframe and photomontage visualisations, and plans showing the zones of theoretical visibility (ZTVs).

Visualisations (wireline and photomontages) will illustrate the magnitude of visual change likely to be encountered from a number of viewpoint locations, which we seek to agree with Aberdeenshire Council and SNH. In line with good practice, the chosen viewpoints from which visualisations will be presented within the ES will be those locations where visual receptors have a greater sensitivity to change. In addition, visualisations will be from a series of viewpoints at different distances and directions from the Proposed Development site.

The identification of visual receptors has been guided by the initial ZTV carried out on the indicative design layout (Figure 6) produced in order to identify where the most sensitive areas requiring assessment are likely to be located. The predicted magnitude of the visual change at the receptors will be assessed in conjunction with the sensitivity of the particular visual receptor to determine a level of visual effect in line with EIA regulations.

As requested by SNH and Aberdeenshire and Angus Councils during pre-scoping discussion, a preliminary list of potential viewpoint locations based upon an initial review of receptors with theoretical visibility within the study area has been identified and these are presented in Table 1 below. We would welcome comment from Aberdeenshire Council and SNH in particular on the appropriateness of these chosen viewpoints.

Viewpoint	Location	Approx. Grid Reference	Approx Distance to Site Boundary (km)	Reason for Selection
1	B974 near Cairn O'Mount	364866, 781024	2.9km	Nearest road to site linking Fettercairn and Banchory
2	Cairn O'Mount viewing platform, B974	365040, 780490	2.8km	Aberdeenshire Council Valued View
3	Unclassified road near Ferneybank and Milden Lodge, Glen Esk	353748, 778785	4.8km	Representative of views from Glen Esk
4	Clachnaben	361406, 78550	3.2km	Popular local walk and viewpoint
5	Mount Battock	354962, 784472	3.2km	Closest Corbett Hill to site
6	Old Military Road, Glendye	364765, 785268	4.0km	Representative of views from within Glendye
7	Fettercairn	365037, 773512	5.7km	Nearby village and Conservation Area
8	The Burn, near Edzell	359577, 771675	6.0km	Nearby Listed House and Designed landscape
9	Hill of Wirren	352284, 773925	7.3km	Angus Grampian Foothills trig point
10	Edzell Golf Course	359570, 768160	9.5km	Popular local golf course
11	Maule Monument, Hill of Rowan, Glen Esk	347322, 779550	8.9km	Scheduled Ancient Monument in Glen Esk
12	White Caterthun Hill Fort	354747, 766098	12.2km	Scheduled Ancient Monument in Angus
13	A90 at Laurencekirk	372050, 771020	12.7km	Representative of A90 users
14	Black Hill, Cairngorms National Park	345810, 775270	13.0km	One of the closest National Park hills to site
15	Garvock Hill, near Laurencekirk	373870, 770620	14.5km	Aberdeenshire Council Valued View and picnic spot
16	Brechin Golf Club, bridge over the A90	360040, 762180	15.5km	Representative of views from near Brechin
18	Mount Keen	340909, 786904	16.3km	Popular National Park Munro
19	A90 at Temple of Fiddes	381813, 781707	19.5km	Representative of A90 users
22	Lochnagar	324390, 786176	26.5m	Popular Munro and viewpoint within National Scenic Area
23	Loch of Skene,	378590, 808025	30.5km	Representative of

Table 1: potential viewpoint locations

Photomontages will be included within the LVIA to best illustrate the changes to views from those viewpoints that are within close proximity to the wind farm (up to 20km away) as is supported by SNH guidance. Wirelines images will be used to demonstrate smaller scale changes from viewpoints further away. Based on the proposed list of viewpoints it is anticipated that viewpoints 1 to 17 would be illustrated by photomontages and the remainder with wireframe images. Photomontages 1-17 would also be accompanied by wireline images from all these viewpoints.

ZTVs will be produced on the final wind farm design proposal to illustrate theoretical visibility of the proposed turbines at both the approximate hub height and maximum blade tip height the applicant seeks consent for.

While there are very few residential properties in close proximity to the project site the impacts on visual amenity of properties with the wider area will be considered and take into consideration distance, orientation of properties and principal views.

Visual information will be presented in a way which communicates as realistically as possible to members of the public the theoretical visual impact of the proposal. All visualisation images will be accompanied by a description of how to view the image so that it best replicates what will be seen if the proposal is constructed. In line with SNH guidance this is generally at “a comfortable arm’s length”.

5.6 Cumulative Effects

Cumulative LVIA is likely to occur over a larger study area and this will be agreed with Aberdeenshire Council and SNH. A radius of 60km will be used for the cumulative impact assessment with other wind farm developments and proposed projects in the wider study area, in accordance with SNH guidance on cumulative impacts.

The EIA will incorporate the most recent SNH policy guidance on carrying out cumulative assessment for wind farm development. Wind farm sites within the cumulative study area which will be considered within the assessment are those that are already operational, in construction, consented but not yet built and those for which a planning application has been submitted or determined. It is proposed that possible wind farm sites that are the subject of screening or scoping opinions, but have not yet been submitted as an application, are not considered within the cumulative landscape assessment on the basis that they may not progress to full applications and the details on form and scale of the Proposed Development will be largely unknown.

The following wind energy developments would be considered within the cumulative impact assessment based on the most up-to-date SNH wind farm data available online (8 July 2015). It is accepted that the cumulative picture will change in time (and very probably has since July 2015), however this will be considered fully within the assessment.

Wind Farm	Approx. Distance (km)	Status
Mid Hill	8	Operational
Mid Hill II	8.5	Operational
Herscha Hill	11	Operational
Droop Hill	13.5	Operational
Tullo	14	Operational
Tullo II	14.5	Approved
St John’s Hill	19	Operational
Clochahill	19	Operational

Hill of Aquhirie	20	Operational
Meikle Carewe	22	Operational
Cushnie	26.5	Application
Macritch Hill	35.5	Application
Govals	36.5	Approved
Dusty Drum	36.5	Application
East Skichen	37.5	Application
Fawney	38.5	Application
Kildrummie	40	Operational
Cairnmore Farm Ext.	41.5	Application
Ark Hill	41.5	Operational
Saddle Hill	42.5	Application
Tullymurdoch	43.5	Application
Drumderg	45	Operational
Welton of Creuchies	45.5	Approved
Stony Hill	49	Application
Clashindarroch	50	Approved
Corskie	50	Application
Cairnbrogie	51	Application
Dorenell	51	Approved
Dorenell Ext.	52	Application
Tillymorgan	52	Application
Dummuies	52	Operational
Hill of Fiddes	52	Operational
Dulater	55	Application
St Johns Well	57	Operational
Gordonstown	57	Operational
Mains of Hatton	60	Operational

Table 2: Known Cumulative Developments within 60km

The cumulative impact assessment within the EIA will take into consideration all wind farm proposals. The cumulative LVIA will also take in account single turbines within a 10km radius of the Development site where they are operational, consented or submitted as a planning application and are over 50m in height to blade tip.

6.0 Ornithology

6.1 Introduction

This chapter sets out the approach that has been undertaken to identify bird interests on and adjacent to the Proposed Development site and describes the assessments which are ongoing as part of EIA to determine potential effects on birds.

Wind farms can impact upon birds in four main ways:

- Displacement through indirect loss of habitat if birds avoid the wind farm and its surrounding area due to turbine operation and maintenance/ visitor disturbance;
- Death through collision or interaction with turbine blades; and
- Direct habitat loss through construction of wind farm infrastructure.
- cumulative effects with other projects or activities that are constructed during the same period

The development site is located 11km south east of the Glen Tanar SAC which lies within the Cairngorm's National Park. This is designated for blanket bog, Caledonian Forest, dry heaths and wet heathland with cross-leaved heath and otters. Glen Tanar is also a National Nature Reserve, a SSSI and an SPA for birds such as Capercaillie, Hen Harrier, Osprey and Scottish Crossbill. Given the distances involved the project is not likely to impact on this designated area. Surveys to date have recorded relatively low numbers of Hen Harrier, Golden Eagle and Osprey flights and no Capercaillie or Scottish Crossbill.

There is no evidence that individuals of species from designated sites are using the wind farm site. Survey to date has focused on recording and assessing the impacts on wider countryside species.

The majority of the project site is managed extensively for grouse shooting and surveys carried out on the site have identified large numbers of black grouse lower down the plateaux and within the buffer area (described in more detail below). RSPB detail that there is a single golden eagle nest within 10km of the Estate boundary (at an unspecified location), whilst golden eagle activity to the north of the site was also reported by the RSPB during pre-scoping discussion. However, golden eagle activity on and around the site has not been as high as might have been expected. There have been sightings of short-eared owl, red kite, peregrine, curlew, ring ouzel and greylag and pink footed geese, though in general, flights recorded have been recorded in low numbers.

The results of the site bird survey work coupled with information extracted from the Environmental Statements of other wind farm developments in the area will be used to inform the design of the wind farm layout where possible to minimise or mitigate any identified adverse effects of the Proposed Development on bird species and where possible identify enhancement opportunities.

6.2 Bird Survey Results

Ornithological surveys began on site in April 2012 with raptor and black grouse surveys and Breeding Bird Surveys (BBS). Four vantage points were established in June 2012 in agreement with SNH/RSPB with a 5th added in April 2013. All surveys have been carried out in accordance with SNH guidelines and best practice.

Breeding bird surveys were carried out in 2012 and 2013 and 2015.

The Site has been found to contain potentially sensitive nesting species such as merlin, black grouse and golden plover. However, survey results to date have not identified any further species of note nesting and breeding on site.

Additional survey work will include assessment of the flight lines of breeding birds and migratory birds that cross or are in close proximity of the Proposed Development. For any potentially sensitive species that pass through the site at specific times of the year, collision risk analysis will be completed and documented within the ES.

Breeding raptor surveys following the methods set out in Hardy et al (2009) were carried out in 2012, 2013 and 2015. This included SNH recommended survey buffers out from the turbine area (e.g. 2km from most raptor species, 6km for eagles). Vantage point surveys to quantify bird flight activity across and adjacent to the Proposed Development site have been ongoing each month since June 2012 at four locations. Discussions were carried out with SNH about the appropriateness of the vantage point locations and a fifth was added in May 2013.

At this stage the applicant is willing to share data compiled to date with Aberdeenshire Council, SNH and the RSPB as part of EIA Scoping. Discussions between ornithological consultants and SNH have determined that Vantage Point Surveys will continue until the end of March 2016.

6.3 Bird Survey Methodology

All ornithological surveys carried out on site conformed to guidance contained within Scottish Natural Heritage (2005, revised 2010) *Survey methods for use in assessing the impacts of onshore windfarms on bird communities* and the survey methodology was discussed with the relevant area officers from SNH and the RSPB. The bird survey information will be presented in full within the ES with separate confidential Annexes for sensitive information as per SNH guidance.

It is necessary to consider each receptor's conservation status, its distribution and its population trend based on available historical records, the latter of which can be obtained from local raptor study groups or the NBN Gateway for example. The significance of potential effects is determined by integrating the assessments of Nature Conservation Value and Magnitude in a reasoned way.

Collision Risk Modelling (CRM) and other data gathered during assessment will be analysed and presented with the ES Ornithological Chapter. Where sufficient flightline data has been collected, CRM will be used to predict the potential effects on bird populations to collide with the rotating turbine rotor blades. The ES will include specific reference regarding the likelihood of impacts on key receptors and what the cumulative effect of the Proposed Development is likely to be in the context of surrounding wind farm activity.

The Glendye Wind Farm ES will include an appraisal of the following:

- Establish and define the populations Nature Conservation Value;
- The impact of collision mortality on the key receptors during operation of the wind farm;
- The impact of disturbance on the key receptors during construction, operation of the Development;
- The impact of construction and operation of the Proposed Development on the distribution of key receptors; and
- The impact of the cumulative effect of a), b) and c) in combination with other wind turbines proposals on the maintenance and distribution of the key receptors in the long term.
- Mitigation measures where necessary and the associated residual effects.

As a minimum, the following national legislation, policy and guidance will be taken in to account as part of the assessment:

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

- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (The Habitats Regulations);
- SERAD (Scottish Executive Rural Affairs Department) 2000. *Habitats and Bird Directives, Nature Conservation; Implementation in Scotland of EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds* (“the Habitats and Birds Directives”). Revised Guidance Updating Scottish Office Circular No 6/1995;
- European Commission (27 October 2010) Natura 2000 Guidance Document ‘*Wind Energy Developments and Natura 2000*’. European Commission, Brussels.
- The UK Biodiversity Action Plan (BAP) and UK Post-2010 Biodiversity Framework;
- Eaton et al. (2009). *Birds of Conservation Concern 3*;
- IEEM (2006) *Guidelines for ecological impact assessment in the UK*.
- Scottish Natural Heritage (2000) *Windfarms and birds: calculating a theoretical collision risk assuming no avoidance action*. SNH Guidance Note;
- Band, W., Madders, M. and Whitfield, D.P. (2007). *Developing field and analytical methods to assess avian collision risk at Windfarms*. In: de Lucas, M., Janss, G.F.E. and Ferrer, M. (eds.) *Birds and Windfarms: Risk Assessment and Mitigation*. Pp. 259 - 275. Quercus, Madrid.
- Scottish Natural Heritage (2006) *Assessing significance of impacts from onshore windfarms on birds outwith designated areas*;
- Scottish Natural Heritage (2009). *Environmental Statements and Annexes of Environmentally Sensitive Bird Information; Guidance for Developers, Consultants and Consultees*;
- Scottish Natural Heritage (2005, revised 2010) *Survey methods for use in assessing the impacts of onshore windfarms on bird communities*;
- Scottish Natural Heritage (2013, revised 2014) *Recommended bird survey methods to inform impact assessment of onshore wind farms*.
- Scottish Natural Heritage (March 2012). *Assessing the Cumulative Impact of Onshore Wind Energy Developments*;
- Scottish Natural Heritage (July 2013) *Assessing connectivity with Special Protection Areas*; and
- Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2009) *Raptors, a Field Guide to Survey and Monitoring*. 2nd Edition. The Stationery Office, Edinburgh.

6.4 Cumulative Effects

Cumulative assessment and the impact on local ornithology in conjunction with other nearby wind farm developments will be provided on all species of particular interest or concern.

7 Ecology

7.1 Introduction

There are no significant sized statutory ecological designations present on site, however it is recognised that protected species are likely to be present and that peat and sensitive habitats will be found on site.

Particular focus within the EIA will be paid to the possible effects of the Proposed Development on habitats and protected species. NVC and peat survey (probing and classification) work will help inform where turbines and associated infrastructure should be located. The Proposed Development infrastructure will attempt to avoid areas of deep peat or sensitive peat habitats including Ground Water dependant Terrestrial Ecosystems (GWDTE). Development will set out to ensure that the overall biodiversity of the site is maintained and enhanced where possible with meaningful and practical steps identified to mitigate any potential effects.

7.2 Designated Sites

A review of available published data (SNH digital datasets and JNCC), has identified a number of sites designated for wildlife and ecological interest within the wider area. It has been identified that no RAMSAR or National Nature Reserves (NNR) are to be found within 10km of the Proposed Development site.

The Gannochy Gorge SSSI is located 4.5km south of the Proposed Development site. This is designated for bryophyte assemblage, lichen assemblage, beetles and non-marine Devonian geology. Also located 7km south east of the site is the Eslie Moss SSSI, designated for its basin fen. Given their reasons for designation these areas would not be affected by the project

A tributary of the River Dee running along the northern boundary of the Proposed Development site is designated as a Special Area of Conservation (SAC) due to its importance for freshwater pearl mussel, Atlantic salmon and otter populations. This SAC is fed by watercourses within the Proposed Development site itself. Given the potentially large volume of peat on site, the hydrological impact of development will require careful assessment and appropriate mitigation will need to be agreed with SEPA and SNH at an early stage of the development process.

The Proposed Development area is predominantly high plateaux rugged moorland used currently and historically for shooting and sheep grazing. The site is predominantly a mix of upland rolling moorland, craggy outcrops and heath, with areas of deep and shallow peat. Areas of blanket bog are likely to be present and there are a number of watercourses traversing the site. There are no lochans within the project site.

Areas of Sitka Spruce plantation, agricultural ground and moorland are found on the access track route to site from the B966. The access track passes through two small conifer plantations before following an existing hill track on open moorland to connect to the Proposed Development site. The proposed access track route will also utilise existing agricultural ground used for planting and grazing but only in small quantities. The access track does not cross areas with designated ecological protection status, at national, regional or local level, that we are aware of.

Appropriate site design mitigation will be employed through the EIA design process to locate turbines and access tracks on areas of lower ecological sensitivity. The Proposed Development is not expected to give rise to any significant adverse effects on ecological habitats subject firstly to sensitive and sympathetic site design, and secondly by undertaking to employ environmental best-practice during wind farm construction and operation. Any felling required as part of the access track is expected to be limited in quantity and would be calculated and assessed as part of EIA following design freeze. Where possible the access track would utilise existing tracks and forest rides where possible, albeit with a degree of widening.

Table 6.2 provides a summary of the statutory designated sites within 15km of the Development site boundary.

Site	Designation	Approx. Distance and Direction
River Dee	SAC	Adjacent to northern boundary
Gannochy Gorge	SSSI	4.5km south
Eslie Moss	SSSI	7km south
North Esk and West Water Paleochannels	SSSI	8km south
Cairngorms Massif	SPA	9km west
Glen Tanar	SSSI/NNR	10.5km north-west
Shannel	SSSI	11km north

Table 3 Summary of Designated Sites

7.3 Baseline Surveys

Baseline collection of site information will include not only the areas where construction is proposed to take place but also the wider area will be examined in order to better understand potential impacts not readily apparent on the Proposed Development site. All documented sources of data and results will be presented within the ES.

Baseline surveys of Valued Ecological Receptors (VER's) which are considered to be habitats or species of international, national, regional or local importance thought, or known, to be present within the site or surrounding area will be undertaken. Assessments will also consider the impacts of the Proposed Development on habitat continuity in terms of designing site infrastructure and the possibility for inclusion of a number of river or watercourse crossings.

A habitat survey based on NVC and will be carried out on site as part of and along the proposed access track route, using aerial photography to aid habitat mapping as part of the EIA process. The aim of this survey will be to establish the habitat types present on the site – particularly notable habitats of high conservation value.

Further ground survey work will consist of walkover surveys to look for evidence of specific protected species and to try and identify spraints or droppings, resting places, etc. Further protected mammal surveys will be carried out as part of the EIA, namely for badger, otter, water vole, bats and possibly great crested newts, if initial surveys indicate the likely presence of these protected species.

In order to gain a preliminary understanding of peat depths and GWDTE across the site, a reconnaissance peat probing programme and Phase 1 habitat survey has been undertaken. The scope of probing was informed by the variability in conditions across the site (inferred from the geomorphological mapping described previously), the potential locations of wind farm infrastructure and the time available for site investigation. The site was divided into three broad geographic areas, and transects planned to take in a representative range of locations from valley floor to hill summit in each area. Further details of this assessment are set out in Chapter 11.

Peat survey work will be used to inform the layout of tracks and turbines to ensure that deep peat areas, blanket bog and raised bog vegetation are, where possible, avoided. In particular the impact of the turbine foundations, array road network, drainage and other physical infrastructure on the peatland resource will be assessed. Where effects on peat are unavoidable the risk of peat slide will be assessed, following government guidance. The ES will also be accompanied by a Peat Management Plan (PMP) which will set out the opportunities for peatland and open habitat restoration as part of Development.

Where habitats are identified as sensitive then appropriate ecological survey methods will follow SNH guidance for EIA ecological surveys and take account of recent SEPA guidance on GWDTEs. The ecological survey data collected as part of EIA will be made available to consultees in order that they can fully consider the likely ecological effects of the Proposed Development.

An assessment of the priority peatland and the data gathered will be used to inform site design, avoiding where possible the most sensitive habitat.

EIA will take into account the relevant wildlife legislation and guidance, namely:

- Habitats and Birds Directives;
- Wildlife & Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act 2004;
- Conservation Regulations 1994;
- Protection of Badgers Act 1992; and
- Scottish Government Interim Guidance on European Protected Species, Development Sites and the Planning System.
- Aberdeenshire Council Biodiversity Action Plan

Information on designated sites and areas of habitat or species sensitivity within or close to the Proposed Development site or along the preferred site access route will be researched on the SNH website and consulted upon with other statutory consultees and local interest groups.

7.4 Fieldwork

As previously indicated a Phase 1 habitat assessment was completed on site in October 2015 and comprised a walkover survey. This has been used to confirm the habitat communities present on the Proposed Development site.

The blanket bog habitat has been valued at the County level. The non-peatland habitats are of lesser value (Low to District level).

GWDTE are present but of low to moderate groundwater dependency as a consequence of their association with surface waters.

Management effects are limited, in the absence of intensive grazing, burning and/or drainage. As such, away from the summit ridges, most of the site's priority peatland, blanket bog habitat is in good ecological condition.

Extensive erosion of the peatland habitat has and is taking place on the summit ridges. Areas that have eroded historically have now stabilised, and revegetated, but ongoing erosion is cutting headwards into areas of otherwise intact, blanket bog habitat.

Conservation management options would appear to be limited by the good condition of the extensive blanket bog but opportunities relate to the ongoing erosion of this habitat and the open nature of the site – a consequence of its historical use as a grouse moor.

The further ecological surveys undertaken on site as part of EIA will be agreed, where possible, with SNH and all ecological survey data collated during the EIA surveys will be included with ES appendices. Surveys will be carried out at appropriate times of the year and by qualified and experienced personnel.

The Phase 1 reporting has been submitted to SEPA for review and further comments have been offered in response, as set out in Appendix 2.

Protected Species

At present the following scope of assessment for protected species is proposed:

Otter

Watercourses within the survey area will be surveyed for field signs of otter in summer 2016. Survey methodology will follow relevant guidance and aim to record signs of otter activity, particularly sprainting sites, lying up sites and holts.

Water Vole

Watercourses within the survey area will be surveyed as described in the Water Vole Conservation Handbook in summer 2016. Survey will aim to assess the suitability of habitat for water vole and record any field signs indicating the presence of the species.

Pine marten

Suitable habitats within the survey area will be surveyed for signs of Pine marten in summer 2016. Areas of dense coniferous plantation cannot be comprehensively surveyed, but track verges and rides will be inspected. Survey methodology will follow the relevant guidance.

Badger

Suitable habitats within the survey area will be surveyed for signs of badger in summer 2016. Areas of dense coniferous plantation cannot be comprehensively surveyed, but track verges and rides will be inspected. Survey methodology will follow the relevant guidance and aim to record any evidence of badger, particularly sett locations.

Wildcat

Suitable habitats within the survey area will be surveyed for signs of wildcat in summer 2016. Areas of dense coniferous plantation cannot be comprehensively surveyed, but track verges and rides will be inspected. Survey methodology will follow the relevant guidance.

Great Crested Newt

In Scotland the great crested newt distribution is predominantly in Dumfries and Galloway, the Borders, across the central belt and around Inverness. A 1995-96 national survey located 85 ponds in Scotland with great crested newt populations. Subsequent work from local surveys and environmental assessments linked to development proposals has brought this number up to around 100 (SNH, 2013). Given the lack of lochans within the Proposed Development area and its elevation (400m a.s.l. and above) and range of the species, it is unlikely that great crested newts are present and so detailed surveys are not considered necessary.

Bats

While it is unlikely significant numbers of bats will use the Proposed Development site regularly/extensively, a staged bat survey will be carried out in accordance with the principles established within the Bat Conservation Trust (BCT) 2012 guidance. Surveys will be carried out within the main bat activity period (April to September 2016).

Early surveys in April and May 2016 aim to locate any potential roost sites within or immediately adjacent to the ecology survey area. This will inform the extent of further assessment required as part of EIA and will be confirmed through discussion with SNH at the time.

Other Species

A watching brief will be in place during all ecological monitoring for any other notable species, e.g. red squirrel. The location of any such records will be recorded with a hand held GPS. Whilst we recognise the potential value of the site for some invertebrates we consider that significant effects are not likely where sensitive habitats are respected through design mitigation.

7.5 Assessment

Assessments will seek to clarify the extent of and assess the significance of the site in relation to priority habitats and species protected under current legislation and policy, both at an EC and UK level. Any local authority policy guidance on habitats and protected species specific to the area will also be taken into account.

All ecological survey methods will be completed in line with standard methods of assessment for onsite habitat and identified species. Both the short and long term effects of the Proposed Development upon habitats and species will be included. The methods for assessing significance of effects will follow the most relevant guidelines produced by the Institute of Ecology and Environmental Management (IEEM).

Mitigation proposals to avoid areas of higher sensitivity or designated sites will be documented within the ES and detail how impacts and procedures to reduce impacts are to be implemented. If required, potential impacts of the development proposals on nearby sites identified as important for nature conservation will be carefully and thoroughly assessed as part of EIA and appropriate mitigation measures will be outlined in the ES.

Parts of the Proposed Development site will contain peat deposits. Care will be taken during EIA and site design regarding the potential management of the peat resource. The likely methods that will be employed during site construction to manage the peat structure on site will be identified in the ES. Development construction will aim to ensure that the impacts upon peat are minimised in order to avoid peat disturbance and improve the carbon balance of the overall project.

The PMP will include preventative/mitigation measures to avoid significant drying or oxidation of peat through the construction of access tracks, turbine foundations, borrow pits and cable trenches. Where possible to do so temporary infrastructure elements, such as the construction compound and set down areas, will be located on areas of no or low concentrations of peat. Similarly, where practical to do so, floating roads will be proposed to limit the volume of peat excavated.

The PMP will provide details on dewatering, the storage and potential for the reuse of excavated peat. It will detail the likely volume of surplus peat likely to be generated during construction (including quantification of catotelmic and acrotelmic peat), and details on how surplus peat will be reused or disposed of. Details on waste management will also be provided should they be required. All site construction peat mitigation proposals will be detailed within the Construction Environmental Management Document, which will be submitted alongside the ES and application.

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

- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011;
- The Water Environment and Water Services (Scotland) Act 2003 (WEWS);
- The Wildlife and Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act 2004 (as amended);
- The Wildlife and Natural Environment (Scotland) Act 2011;
- The Protection of Badgers Act 1992;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (The Habitats Regulations);
- SERAD (Scottish Executive Rural Affairs Department) 2000. Habitats and Birds Directives, Nature Conservation; Implementation in Scotland of EC Directives on the Conservation of Natural Habitats and of Wild Flora and Fauna and the Conservation of Wild Birds (“the Habitats and Birds Directives”). Revised Guidance Updating Scottish Office Circular No 6/1995;
- Policy Advice Note PAN 1/2013 - Environmental Impact Assessment (Scottish 2013);
Planning Circular 3 2011: Guidance on The Town and Country Planning

- (Environmental Impact Assessment) (Scotland) Regulations 2011;
- Nature Conservancy Council (1998). Guidelines for selection of biological sites of Special Scientific Interest;
 - The UK Biodiversity Action Plan (BAP) and UK Post-2010 Biodiversity Framework;
 - The Argyll and Bute Local Biodiversity Action Plan 2010-2015;
 - IEEM (2006) Guidelines for ecological impact assessment in the UK;
 - Hundt, L. (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust;
 - Natural England (2014) Natural England Technical Information Note TIN 051. 3rd Edition. Bats and Onshore Wind turbines – Interim Guidance;
 - SEPA (2014): Land Use Planning System: Guidance Note 4 - Planning guidance on on-shore windfarm developments;
 - SEPA (2014): Land Use Planning System: Guidance Note 31 - Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems;
 - SNH (2013) Planning for Development: What to consider and include in Habitat Management Plans;
 - SNH (2013) Planning for Development: What to consider and include in Deer Management Plans for development sites;
 - Scottish Renewables, SNH, SEPA, Forestry Commission Scotland & Historic Scotland. (2013). Good Practice During Windfarm Construction. 2nd Edition;
 - SNH, SEPA, Scottish Government, The James Hutton Institute (2011) Developments on Peatlands: site Surveys;
 - Scottish Renewables and SEPA (2012) Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste; and
 - Scottish Government (2011) Calculating Potential Carbon Losses & Savings from Wind Farms on Scottish Peatlands. Windfarms and Carbon savings on Peatlands. Technical Note – Version 2.0.1.

8.0 Archaeology and Cultural Heritage

8.1 Introduction

For the purposes of assessment of cultural heritage and archaeological buildings or sites of interest the ES will refer both to above ground (built heritage) and to below ground or partially buried antiquity remains.

The assessment will consider direct effects and indirect visual and associated other effects of the Proposed Development on historic, built and cultural heritage receptors.

8.2 Baseline Description

Initial desk based surveys have concluded that the Proposed Development site contains no scheduled or candidate sites in the inventory of historic designed landscapes and there are no sites of this type in the surrounding area. There are also no listed buildings or Scheduled Ancient Monuments (SAMs) in or bounding the Proposed Development site and the closest Inventory Garden and Designed Landscape (GDL) is over 3km for the Proposed Development site.

While there are several Grade A listed and Grade B listed buildings in the vicinity of the site, these are found generally to the south and west, at a significant distance and are generally expected to be screened by intervening topography. The closest Conservation Area is Fettercairn which is 5.5km south of the Proposed Development site. Most of these sensitive buildings or landmarks will be terrain shielded from the development, and it should be possible to deal with any residual impacts on other buildings or monuments of importance through project design.

Table 4 below sets out known sensitive cultural heritage receptors within 10km of the site, while Figure 4 shows the receptors which are within a 15km radius.

Receptor	Distance
Grade A Listed Building	
Fasque House	4km
Fettercairn, the square, market cross	5.5km
Balbegno Castle	5.5km
Balbegno Castle, garden with terrace walls and gate	5.5km
Phesdo House	5.5km
Edzell Castle	8.5km
Mains of Edzell, Dovecote	8.5km
Drumtochty Castle	7.5km
Drumtochty st Palladius's Episcopal Church	8km
Conservation Area	
Fettercairn	5.5m
Auchenblae	9.5km
Gardens and Designed Landscapes	
Fasque House	1.25km
The Burn	4.5km
Properties in Care	
Edzell Castle	8.5km
Lindsay Burial Isle	9km
Scheduled Ancient Monuments	
Colmeallie Stone Circle	2km
Kincardine Castle	6km
Fettercairn Market Cross	5.5km

Table 4: Cultural Heritage receptors within 10km

Beyond 10km from site there are numerous SAMs, listed buildings and designed gardens that have theoretical visibility of the Proposed Development. In reality, visibility from these locations is likely to be reduced through vegetation, mature tree planting and other buildings. The likely impacts on these features will be considered as part of EIA.

The EIA baseline assessment will identify the location of any other nearby SAM, listed buildings and their settings and any other special architectural or historic interests within the wider area. Baseline information will be collated from the archaeological and historic sites held in the National Monuments Record of Scotland in Edinburgh to identify locations. The location of scheduled ancient monuments, listed buildings and gardens and designated landscapes will be checked by referencing www.pastmap.org.uk. Further data will also be gathered from the following sources:

- Royal Commission on the Ancient and Historic Monuments of Scotland
- Aerial records of the area in relation to sites and monuments
- OS 1st Edition 6" map coverage
- Cartographic information on previous land uses
- Historic Scotland's databases of listed buildings, Scheduled Ancient Monuments and monuments proposed for scheduling
- The Inventory of Gardens and Designed Landscapes in Scotland (1998)
- Local libraries and other relevant archives or books
- Aberdeenshire Council

8.3 Assessment Methodology

A suitably qualified archaeologist will be appointed to assess the likely presence of archaeology and cultural heritage, to complete detailed assessment of impacts on the historic environment and to advise on appropriate mitigation.

A detailed desk-based assessment would be undertaken for the Proposed Development site and a 200m wide corridor along the proposed offsite access track route. Information sources would include:

- Historic Scotland datasets;
- Aberdeenshire Council Sites and Monuments Record (SMR);
- RCAHMS – Canmore, Historic Land-use Map data;
- Aerial photographs;
- Historic maps held by the Map Library of the National Library of Scotland and the
- National Archives of Scotland;
- Scottish Palaeoenvironmental Database;
- Early Parish Accounts (including Statistical Accounts).

In terms of visual impact of the Proposed Development on buildings or sites of interest the EIA will assess the following cultural heritage receptors:

- Listed buildings;
- Conservation Areas;
- Gardens and Designed Landscapes; and
- Archaeology – above ground and potentially unknown archaeological remains.

The archaeology and cultural heritage assessments (study area to include site boundary area and accesses) will be augmented by a walkover survey to provide information on the archaeological potential of the area, and to validate the documentary information if it is concluded in discussion with the Archaeologist/Cultural Built Heritage specialist at Aberdeenshire Council that the findings of the desk based assessment merits further fieldwork. This fieldwork will:

- Assess and validate any information collated;
- Identify the extent and condition of any archaeological sites identified on site; and
- Clarify whether any unrecorded sites of historical interest are present on site.

An assessment will be made of the potential direct or indirect effects upon the setting of any historical or built heritage features identified through the course of EIA. This assessment will be made against the same ZTV that will be used in the LVIA Chapter.

The ES will address and present the predicted impacts on the historic environment and set out what mitigation, if required, is proposed to reduce overall impact. Direct impacts and indirect impacts on identified receptors will be identified through EIA. Where impacts are considered to be significant, steps will be outlined within the ES to reduce or address these impacts.

Relevant legislation includes:

- The Ancient Monuments and Archaeological Areas Act 1979;
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997;
- The Historic Environment (Amendment) (Scotland) Act 2011 (this includes amendments to the above);
- Scottish Planning Policy, Scottish Government (2010);
- Scottish Historic Environment Policy (SHEP) Historic Scotland (2011); ad
- PAN2/2011 Planning and Archaeology Scottish Government (July 2011).

9.0 Noise

9.1 Introduction

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

Aerodynamic noise from the blades generally increases with wind speed but at the same time ambient background noise at a noise receptor will also increase. For example, while higher wind speeds will mean a greater level of aerodynamic noise the noise of the wind itself passing through natural and built features in the landscape (trees, buildings, etc) will generally mask noise from wind turbines.

Given the distances involved there should be no stand alone or cumulative noise impact on any major settlements or nearby properties from the Proposed Development. The nearest villages are over 5km from the Proposed Development and the nearest uninvolved property is located approx. 2.5km from the nearest indicative turbine. The Glendye Estate properties are circa 4km from the Proposed Development site and at a 200m lower elevation. The distance from the nearby properties from indicative turbine positions are set out in Table 5 below:

Property	Distance	Comment
Waggles	2.4km	South West of the Proposed Development
Colmeallie	2.5km	West of the Proposed Development
Craigoshina	2.9km	South West of the Proposed Development
Hillock	3.1km	West of the Proposed Development
Greenburn	3.9km	West of the Proposed Development
Mains of Balfour	4.1km	South of the Proposed Development

Table 5: Occupied dwellings

ETSU-R-97 recommends that the noise from wind turbines be controlled by the application of noise limits at the nearest residential properties. This is aimed at protecting both night time sleep and daytime amenity. It suggests separate noise limits for the daytime and the night-time period, which are derived from background noise levels measured during the quiet periods of the day (Mon- Fri 18:00-23:00, Sat 13:00-23:00 and Sun 07:00- 23:00) and during the night (23:00 -07:00).

Guidance from the ETSU-R-97 document sets out that where it can be demonstrated that the expected levels of wind turbine noise would not exceed the lower daytime noise limit of 35 dB LA90, 10min at a residential property for wind speeds of up to 10 m/s at 10 m height, then no background noise survey is required for that property.

It is therefore proposed that a noise survey of the existing background noise levels at these receptor locations will not be required to determine compliance with ETSU-R-97. It is considered that the above distances will allow the Proposed Development to comply fully with ETSU noise guidelines and that noise assessment will not need to be carried out as part of site EIA.

9.2 Cumulative Noise

The nearest consented or operational wind farm is at least 8km away from the Proposed Development. On this basis, it would not be considered necessary to undertake a detailed assessment of the cumulative noise impact.

9.3 Construction Noise

Wind farm construction traffic and the transportation of abnormal loads to site, such as turbine components, has the potential to impact on residential amenity and the presence of construction noise is therefore also an important issue that needs to be addressed within the ES. With regard to the relevance of construction noise the following legislation and standards are of relevance:

- The Control of Pollution Act 1974 (CoPA 1974); and
- BS 5228: 2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

CoPA 1974 legislation provides local authorities in England, Scotland and Wales with powers to control noise and vibration from construction sites.

BS 5228 provides guidance on controlling noise and vibration from construction sites and identifies that persons living and working in the vicinity of construction sites need to be protected from unsuitable levels of noise and vibration. It also sets out recommendations and procedures for noise and vibration control related to construction activities.

Construction noise from the Proposed Development and the impact on nearby properties or properties located along the proposed access route are likely to be influenced by the location of the noise receptor, existing ambient noise levels, the duration and working hours of site operations and the characteristics of the noise produced.

The construction noise assessment will include the following:

- A review of the legislation and standards which Proposed Development will have to adhere to in terms of construction noise;
- How the Proposed Development partners aim to comply with the requirements of COPA 1974 and BS 5228-2009; and
- Noise control measures

10 Transport and Access

10.1 Introduction

Wind farm development within Aberdeenshire will be dependent on the transportation of turbine components from a suitable deep port facility to site along the adopted road network. Where the adopted road network cannot accommodate the abnormal turbine component loads upgrades, temporary road improvements or alternative access routes may need to be developed to support Proposed Development.

For the Proposed Development it is likely that shipped components will be delivered to the nearest port facility capable of handling them which in this case is likely to be Dundee, which was the point of entry for Mid Hill turbine components.

A traffic and transport study will be commissioned as part of the EIA and the conclusions of this will be presented with the ES. The Traffic and Transport assessment will identify the preferred route to site from identified ports. The ES will also consider the suitability and foundation requirements for onsite access tracks and construction compound facilities.

There are currently no identified core paths or wider access network routes identified within the Proposed Development site, with the closest in Glen Esk to the west. However, existing agricultural tracks and forestry routes within the Proposed Development site may be used on an occasional basis for recreational access. In the context of the Land Reform (Scotland) Act 2003 there is a general right of access over the land occupied by the proposed wind farm.

10.2 Baseline Description

A traffic and transport assessment will be completed as part of the EIA and the conclusions of this will be presented with the ES. The Traffic and Transport assessment will identify the preferred route to site from identified ports. The ES will also consider the suitability and foundation requirements for onsite access tracks and construction compound facilities.

During EIA the Development partners will consult with Transport Scotland, BEAR Scotland, Aberdeenshire Council and potentially Angus Council and Police Scotland regarding the transportation of large components along the trunk road network. Prior to submitting an application the abnormal loads section of Transport Scotland will be consulted regarding the transportation of components from the nearest suitable port to site.

Detailed assessment will focus on the proposed access to site using the adopted roads in Dundee, Angus and Aberdeenshire to reach the Proposed Development site and the potential for impact on the adopted road network. It will also consider the cumulative impact on the surrounding road network taking on board other road users within close proximity of the site such as quarry and agricultural vehicles.

Initial discussions have already taken place with Transport Scotland, BEAR Scotland and Aberdeenshire Council regarding the proposed route to site. A pre-submission meeting with the Aberdeenshire Council Area Roads officer will be arranged to discuss the extent of information required as part of a the wind farm application.

The preferred access route at present is from the Port of Dundee. Other wind turbines used in developments across southern Aberdeenshire and Angus have been delivered to this deep port harbour. However, other options including port facilities at Montrose and Aberdeen will be considered as part of EIA. From Dundee, abnormal loads would travel north along the A90 dual carriageway to the small settlement of North Water Bridge. Loads would exit the A90 and join an unclassified road passing Edzell Airfield, heading north for approx. 7km before turning east and heading along the B966 for approximately 3km before reaching the Fasque & Glendye Estate. Once

on the Estate a combination of new access tracks, existing road surfaces and hill tracks would be used or upgraded to facilitate load delivery onto the Proposed Development site.

Overall, the amount of felling required to facilitate access through the plantation is predicted to be low-negligible. New access tracks would be required on the upland plateau area to link Proposed Development site turbines.

10.3 Assessment Methodology

The procedures of assessment employed within the EIA will follow the IEA's, 'Guidelines of the Environmental Impact of Road Traffic (1993)'. In addition, site visits and traffic counts along the proposed access route to site for construction vehicles will be undertaken in order to determine existing access along the local road network. Subject to a screening process outlined in the rules contained in the above guidelines the roads afforded assessment will include:

- Road links where traffic will increase by more than 30% (or where the number of HGVs will increase more than 30%); and
- Any sensitive areas where traffic flows will increase by 10% or more.

The likely peak traffic flows identified within the ES will be based on a worst case scenario. Following completion of the traffic flow survey work further consultation will take place with Transport Scotland and Aberdeenshire Council to discuss the suitability of the proposed route taking on board the volume of construction traffic expected and what is likely to be required as part of a Development Traffic Management Plan.

The ES will provide information relating to the preferred access route option for delivering the turbines to site along the trunk road network and other routes where required. The ES will identify access issues, perceived impacts upon the trunk road network and potential stress points at junctions and approach roads through settlements.

The EIA will include consultation with Transport Scotland, BEAR Scotland and the relevant Roads Department of the involved local authorities (if not just Aberdeenshire Council) to ensure that the delivery route to site is suitable and to verify whether there are any weight restrictions along the proposed route. Pinch point analysis and swept path analysis of the proposed route will also be carried out as part of the EIA process. Details for the following will be included as part of the application:

- Access and new junctions requirements;
- Land required for road/access arrangements;
- Abnormal load route assessment; and
- A Traffic Management and Travel Plan.

The ES will demonstrate where the onsite access roads have been developed in order to minimise impacts on vegetation, peat habitats and peat depths. Policy directives advise minimising the impact from construction of the type of access roads used in wind farms. It is likely that some onsite access tracks may be located on peat and will carry very heavy loads. The ES will detail the information necessary for regulators to consider the likely impacts and specific measures required in order to deliver best practice.

Off-site highway design work (if required) would be undertaken in accordance with the Design Manual for Roads and Bridges (DMRB), taking into account any specific requirements of Aberdeenshire as Roads Authority. The assessment of traffic impacts would be considered in accordance with The Environmental Assessment of Road Traffic, published by the Institute of Environmental Assessment.

11.0 Hydrology, Hydrogeology and Groundwater

11.1 Introduction

The ES will contain information on the nature of the Proposed Development site's hydrology and hydrogeology and the potential for construction to affect baseline conditions. A hydro-geological survey will be undertaken in order to establish the baseline conditions and assess the potential effects of the Proposed Development, whether these are significant, and the mitigation appropriate to minimise any identified effects. Watercourses and GWDTE on the north of the Proposed Development site drain into the tributaries for the River Dee SAC. The watercourses that traverse the site mainly originate on the higher ground and feed either into the Water of Charr or the Water of Dye. Analysis of the catchment area and possible construction effects will be carried out as part of the EIA.

Wind farm development involves construction activity and this work can impact upon site hydrology. All phases of development would be carried out with proper regard and understanding of the effect that potential impacts can have on the site and the wider area. Construction can bring about changes in water quality and quantity if development is not controlled and constructed in the proper manner and in line with relevant guidelines.

The ES will examine all potential impacts on the water environment through all stages of development construction. This will include the potential impacts of track construction, foundation excavations, borrow pits, use of plant and machinery, plant compounds and oil storage. Similarly, the ES will also consider the potential impacts of site decommissioning.

In terms of the construction proposed as part of Development and the potential for impacts on water quality, watercourses and migratory fish (downstream) the Development Team will take on board the CIRIA guidance on the control of water pollution. Similarly, reference will be made to SEPA's Pollution Prevention Guidelines in the preparation of the ES and the proposals for development mitigation, i.e. prevention and clean up measures.

11.2 Baseline Description

SEPA, Aberdeenshire Council and Scottish Water are being consulted directly as part of EIA Scoping for feedback on the Proposed Development site and for information these agencies have on site and the wider environment surface and groundwater conditions.

The geology mapping of Scotland (1:50,000) identifies the area as underlain by a mix of mineral and peat superficial deposits.

A detailed picture of peat coverage, depth and sensitivity and site hydrogeology, through site surveys, has been carried out and will be developed further as part of EIA.

A desk-based evaluation of site conditions, including publicly available information on peat depth and condition, physical conditions influencing peat characteristics (elevation, slope angle, geology) and an aerial photograph based interpretation of peatland geomorphology undertaken specifically for the Proposed Development site has already been carried out.

In addition, field-based preliminary peat probing, including consideration of depth variation across the site and peatland condition has already been carried out. Onsite peat depth analysis to date has found that the peatlands at Glendye could be regarded as slightly deeper than typical peatlands in this part of Scotland.

The northwest to southeast aligned ridge from Bonnyfleeces to Sturdy Hill represents the main watershed of the site, dividing catchments draining to Glen Esk to the south and west and catchments draining into the Water of Dye to the north. All of the sub-catchments within the site boundary ultimately drain to the Water of Dye. The headwaters of the numerous streams are partially mapped

into the peatland deposits that mantle the hillsides, and in many cases occupy major peat gullies which continue beyond the watercourses shown on Ordnance Survey maps.

All of Scotland's groundwater bodies have been designated as Drinking Water Protected Areas under the Water Environment (Drinking Water Protected Area) (Scotland) Order 2013 and require protection for their current use or future potential use as drinking water resources. A records search for private water supplies and ground conditions at the site will be carried out as part of EIA. Where available, appropriate maps and existing records will be referenced, including the British Geological Survey (BGS) Geoscience Data Index, the Hydrogeological Map of Scotland and groundwater vulnerability map.

11.3 Assessment Methodology

Assessment and ground condition surveys will clarify the effects of the Proposed Development during all phases on:

- Site hydrogeology and hydrology
- Downstream hydrological processes
- Water quality and quantity
- Aquifer classification and vulnerability
- River and river classification flood risk
- Peat coverage
- Surface deposits

Much of the work on sensitive surface soils will overlap with assessment of habitat and ecology. It is recognised that the assessment of hydrology and ecology are inextricably linked. Direct and indirect impact on watercourses, groundwater and other water features will be assessed. Where required, monitoring proposals and contingency plans will be documented within the ES for consideration by consultees. Similarly, any proposed bridge design or culvert of a watercourse will be detailed within the ES and accompanied by scaled drawings.

The ES will identify the location of and the protective mitigation measures required in order to ensure the viability of all private water supplies within the catchment areas and where required what safeguards will be put in place to ensure the viability of supply for private homes.

Assessments for the potential for Development to impact on peat will be carried out in accordance with the following:

- Scottish Government's, 'Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2007)'
- SNH, 'Constructed tracks in the Scottish Uplands' (2013)
- SNH, 'Good Practice During Windfarm Construction: Version 2' (2013)

The ES will contain site-specific information on all aspects of site work that might have an impact upon the hydrological environment and detail information on preventative action and mitigation to limit impacts. These will include but will not be limited to:

- Fuel transport and storage management
- Concrete production (including if batching plants are proposed and measures to prevent discharges to watercourses)
- Stockpile storage
- Storage of weather sensitive materials at lay-down areas
- Haul routes and access roads
- Earthworks to provide landscaping

- Mechanical digging of new or existing drainage channels
- Vehicle access over watercourses
- Construction of watercourse crossings and digging of excavations (particularly regarding management of water ingress)
- Temporary and long-term welfare arrangements for workers during construction
- Maintenance of vehicles and plant
- Pollution control measures during turbine gearbox oil changes
- Bunding or roofing of transformer areas
- Use of oil-cooled power cables and related contingency measures
- Dewatering of turbine base excavations
- Water abstraction

The ES will also identify if there are particularly sensitive receptors of pollution (e.g. spawning rivers) likely to be impacted upon as part of development. The rate and location of abstraction for water supply for onsite concrete batching, if proposed as part of Development, will be detailed within the ES.

The ES will also set out which periods of the year would be best for certain construction activities to take place, taking into account the need to avoid pollution risks and other environmental sensitivities affecting operational timing, such as fish spawning and higher levels or precipitation.

The ES will set out mechanisms to ensure that workers on site, including sub-contractors, are aware of environmental risks, and are well controlled in this context. The ES will state whether or not appropriately qualified environmental scientists or ecologists are to be used as Clerk of Works or in other roles during construction to provide specialist advice. Details of emergency procedures to be provided will also be identified in the ES.

The presentation of the above information will allow regulators to assess the environmental impact of the proposals prior to determination and provide the basis for more detailed Construction Method Statements which may be requested as part of planning conditions.

An outline Construction Environmental Method Statement will be included within the ES and will consider the following issues in relation to site hydrology and hydrogeology:

- Increases in silt and sediment loads resulting from construction works;
- Point source pollution incidents during construction;
- Obstruction to upstream and downstream migration both during and after construction;
- Disturbance of spawning beds during construction and the timing of works;
- Drainage issues;
- Alteration to hydrological regime and water quality; and
- Impacts on stream morphology.

The chapter relating to Hydrology, Hydrogeology and Groundwater will be prepared with reference to best practice guidance and legislation including:

- Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste, Scottish Renewables and SEPA, 2012;
- SEPA Regulatory Position Statement - Developments on Peat, Scottish Environment Protection Agency, 2010;
- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments, Scottish Government, January 2007;
- Developments on Peatland – Site Surveys and Best Practice, Scottish Natural Heritage, Scottish Environment Protection Agency, Scottish Government and The James Hutton Institute, August 2011;
- Floating Roads on Peat, Scottish Natural Heritage and Forestry Commission Scotland, 2010;

- Managing Geotechnical Risk: Improving Productivity in UK Building and Construction, Institution of Civil Engineers, 2001;
- Ground Engineering Spoil: Good Management Practice, CIRIA Report 179, 1997;
- Scottish Roads Network Landslides Study Summary Report, Scottish Executive, 2005;
- Guidelines for the Risk Management of Peat Slips on the Construction of Low Volume/Low Cost Roads on Peat, Forestry Commission, 2006.
- EC Water Framework Directive (2000/60/EC), Water Environment and Water Services (Scotland) Act 2003, and Water Environment (Controlled Activities) Regulations 2011;
- Planning Advice Note (PAN) 51 Planning Environmental Protection and Regulation, Scottish Government, 2006;
- PAN 69 Planning and Building Standards Advice on Flooding, Scottish Government, 2004;
- Forests and Water, UK Forestry Standard Guidelines, Forestry Commission, 2011;
- Land Use Planning System, SEPA Guidance Note 4 (Planning guidance on onshore windfarm developments), Version 7, SEPA, May 2014;
- Land Use Planning System, SEPA Guidance Note 31 (Guidance on assessing the impacts of developments on groundwater abstractions and groundwater dependent terrestrial ecosystems), version 1, SEPA, October 2014;
- Good Practice during Windfarm Construction, 2 nd Edition, Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland and Historic Scotland, 2013;
- Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors C532, CIRIA, 2002;
- Control of Water Pollution from Linear Construction Projects C649, CIRIA, 2006;
- Environmental Good Practice on Site C650, CIRIA, 2005;
- The SUDS Manual C697, CIRIA, 2007; and
- Technical Flood Risk Guidance for Stakeholders, Version 8, SEPA, February 2014.

12.0 Aviation, Telecommunications and Public Infrastructure

12.1 Introduction

Wind farm developments have the potential to interfere with aviation radar and electro-magnetic signals passing above ground and existing infrastructure buried below ground.

Wind farm developers are encouraged to engage with utilities and airport operators at an early stage in the design process, to establish the potential impacts and agree acceptable technical solutions. Where actual or potential conflicts exist, it is important that a solution is identified and that the relevant consultee agrees to that solution being realised within a suitable timescale.

The relevant telecommunication, public water, gas and electricity utility providers will be consulted regarding infrastructure across the Proposed Development footprint to ensure that no existing infrastructure is affected through construction and operation.

To assist aviation consultants responding to this scoping request the proposed turbine co-ordinates as set out in Figure 2 have been set out in Table 6 below.

Northing	Easting
358266	781611
358774	781641
358373	781179
359712	780667
358758	780536
359589	779118
359348	780963
360951	780868
360199	781043
358896	781143
360061	779513
359255	779365
359015	778844
359721	779768
360239	780043
360409	780659
359917	780304
360751	780337
360726	781213
359359	779983
358190	782061
359998	778696
358674	782084
359165	780353
359359	778591
359565	778149
360147	778234
360736	778331

360582	778781
361158	778859
359182	782082
359765	782377
357835	781140
358345	780728
357517	781462
357106	781671
358764	779822

Table 6: Proposed Turbine Co-ordinates

12.2 Aviation Baseline

An initial assessment of aviation issues has been carried out by Coriolis Energy Ltd, the conclusions of which are contained in Table 7 below:

Aviation Interest	Location	Position
Aberdeen Airport	43km NE	May have concerns initially however outside of suggested 30km consultation zone.
NATS Perwinnes Radar	45km NW	May have concerns initially due to Enroute ATC.
Dundee Airport	56km SW	Unlikely to object. Outside of suggested 30km consultation zone.
RAF Leuchars	61km S	Unlikely to object due to current operations.
RAF Buchan Radar	79km NE	Unlikely to object – on periphery of 80km consultation zone.

Table 7: Aviation receptors

The site is located outwith the consultation zones for any airports, though NATS have been consulted and state that some of the turbines may be visible to Aberdeen Airport (that they provide ATC services for) and as such they may advise the Airport to object. The operational Meikle Carewe and Mid Hill wind farms are considered to be equally visible to the radar at Aberdeen Airport and have successfully agreed mitigation solutions to allow these proposals to proceed.

A NATS assessment was commissioned in September 2012. This concluded that some turbines would be visible to Perwinnes Radar (45 km to the north east of the site). No further work has yet been undertaken on this however given the precedents in the area and the distance involved we believe it should be possible to agree mitigation if required.

An objection may be received from the MOD on the basis of radar impacts on RAF Leuchars and/or RAF Buchan. Over the past few years the MOD has objected to most wind farm applications in Aberdeenshire due to the potential impact on RAF Buchan. However, it understood that mitigation has been put into place to allow development of the Mid Hill II Wind farm and it expected that this would be available for the Proposed Development also.

12.3 Aviation Assessment Methodology

Further consultation will be carried out with Aberdeenshire Airport, the Civil Aviation Authority, NATS and the MOD as part of EIA. Information obtained from the consultees will be taken into account and if necessary the Development partners will begin discussions with the relevant operators over the

likelihood and practicalities of radar mitigation. The conclusions of any discussions or agreements with relevant operators will be presented in the ES.

12.4 Telecommunication Baseline

There are no known telecommunication masts in the immediate vicinity and that there are unlikely to be any microwave routes crossing the site primarily because of the surrounding terrain.

12.5 Telecommunications Methodology

Further consultation has been carried out with OFCOM, Atkins, television and other telecommunication providers to clarify whether there are any links crossing the Proposed Development site and to confirm whether Development within this area is likely to impact on digital TV signals. Initial consultation with these companies has indicated no objection.

Information obtained from all consultees will be taken into account and if necessary the Proposed Development layout will be altered to take on board existing links.

13.0 Shadow Flicker and Reflectivity

- 13.1** Scottish Government web-based Advice on onshore wind turbines (previously known as PAN45) provides the following information on shadow flicker:

"Under certain combinations of geographical position, time of day and time of year, the sun may pass behind the rotor and cast a shadow over neighbouring properties. When the blades rotate, the shadow flicks on and off; the effect is known as "shadow flicker". It occurs only within buildings where the flicker appears through a narrow window opening. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the potential site.

Where this could be a problem, developers should provide calculations to quantify the effect. In most cases however, where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), "shadow flicker" should not be a problem."

In the case of wind turbines the sun can reflect off or lie behind turbine moving blade parts when they are rotating and cause intermittent shadow flicker. The 'reflecting' effect can be minimised by selecting a matt coating for wind turbines which is specifically designed to reduce the potential for reflection. With regard to shadow flicker from the sun lining up with the turbines and a property, the conditions under which shadow flicker can happen and the properties which are likely to be affected are both well understood and any affected properties will be identified in the in the ES.

However, Shadow flicker generally presents a significant issue only in relative proximity to sites and at a distance of up to 10 rotor diameters. There are no residential receptors within a 2400m radius of the outside edge of the Site. Shadow flicker is not therefore considered to be of significance and we would respectfully request that this is scoped out of EIA.

14.0 Socio-economics

- 14.1** A desk-top socio-economic assessment will consider the potential direct and indirect, negative and positive effects of the Proposed Development on the immediate area, the local authority and nationally

Existing publicly held information, surveys and assessments of socio-economic indicators for the area will be collated and reviewed as part of EIA. Visitor and tourist profiles, land uses and ownership and nearby public facilities will also be considered within the EIA. Public attitudes to wind farms will be referenced along with other background information in order to assess the Proposed Development for significant effects.

Aberdeenshire Council, Angus Council, Sustrans, Scotways and local Community Councils will be consulted on the proximity of the site to public services and facilities, public rights of way, popular walks, sections of the national cycle network or other cycle paths, in order to build up a picture of what opportunities for recreation and access exist in the vicinity of the wind farm. Similarly, the EIA will consider any other recreational land uses that take place close to the site such as fishing, horse riding, shooting and golf.

The provision for public access to the Proposed Development site, in line with the requirements of the Land Reform (Scotland) Act 2003, will be documented within the ES. This will clarify the extent of current public access, define existing routes and identify restrictions during construction and operation of the wind farm project. The impact of the Proposed Development on public footpaths and rights of way will be clearly indicated. If any re-routing of paths under a Right of Way is required alternative routes will be highlighted for consideration.

The concept of economic benefit as a material consideration is explicitly confirmed in SPP and is now becoming an issue afforded more weight in the determination of planning applications across Scotland. This fits with the Government's priority to grow the Scottish economy, as set out in the policy statement "Securing a Renewable Future: Scotland's Renewable Energy", and the subsequent reports from the Forum for Renewables Development Scotland (FREDS).

The ES will include relevant economic information connected with the project, including the potential number of local jobs (local authority and Scotland wide), economic activity associated with the procurement, construction, operation and decommissioning of the Proposed Development, community benefits and disbenefits and opportunities for local people to invest in the wind farm.

15.0 Air and Carbon Emissions/Calculation Assessment

15.1 Introduction

Wind farm development has the potential to help contribute to national targets on carbon emissions by making significant savings on greenhouse gas emissions through offsetting electricity generation from fossil fuel power stations. The EIA will consider the current electricity generation mix within a UK context at the time of assessment and calculate the amount of theoretical carbon dioxide (CO₂) and other greenhouse gas emission savings that could be made depending on the alternative source of electricity generation the wind farm could be displacing at any given time.

It is anticipated that the peat survey works will prompt a request from SEPA to further assess peat deposits on site and therefore it will be necessary to complete a carbon balance assessment. Carbon balance is therefore likely to be scoped in to the EIA.

The ES will also describe the likely significant effects of the Proposed Development on the wider environment, including any direct and indirect effects that stem from manufacturing and construction related impacts during build, operation and decommissioning. It will summarise the positive and negative effects of the Proposed Development which result from:

- a) The existence of the Proposed Development;
- b) The use of natural resources; and
- c) The emission of pollutants, the creation of nuisances and the likelihood for waste.

15.2 Policy Context

The Scottish government policy for wind farm development requires that developers produce a statement of the expected carbon savings over the lifetime of a wind farm development. The 'carbon calculation' assesses the carbon emissions associated with ground conditions, access preparations, foundation excavations, materials used on site, the transportation of materials and components to site and any other carbon loss through the felling of trees (which may be offset through the compensatory tree planting) and any loss from the degradation of peat/peaty soils.

This calculation is then used to clarify the energy payback period for the Proposed Development.

15.3 Assessment Methodology

Reference will be made to the relevant documents highlighted below, produced by the Scottish Government, and a full life cycle carbon footprint of the wind farm development will be submitted within the ES.

Calculating Potential Carbon Losses & Savings from Wind Farms on Scottish Peatlands (Scottish Government, 2012)

Calculating Carbon Savings from Wind Farms on Scottish Peatlands - A New Approach (Scottish Government, 2012)

16.0 Public Consultation

16.1 Introduction

As part of the Glendye Wind Farm project the Development Partners will engage with the local community and community councils within the area.

Glendye Wind Farm Limited and Coriolis understand the value of consultation and community ownership. Coriolis has been at the forefront of innovative community benefit associated with its UK wind farms working in the past with Falck Renewables on wind energy co-operatives which allow people to buy a share in their local wind farm and resident electricity discounts and rebates for people local to wind farm projects.

We recognise the benefit of promoting the Proposed Development to the local community in order to stimulate comment and debate on the design of project proposed. The Development Team aims to establish an open and transparent information exchange with the public through development design and post planning submission and we see public consultation as a continuous engagement process.

The timetable for public consultation begins with our scoping request. The Proposed Development site is located within the Feughdee West Community Council area while access will come through the Mearns Community Council area. The Inveresk Community Council area bounds the Proposed Development site to the west. Detailed letters outlining the Development proposals will be sent out to local community councils, councillors, MPs and MSPs and any other amenity or civic groups identified during EIA scoping, in addition to a copy of this Report. Letters were also sent to local community councils, councillors, MPs and MSPs on submission of a planning application for an temporary anemometer mast in August 2015.

16.2 Pre-Application Consultation

It is proposed that a public exhibition will be held in order to inform and engage with the communities closest to the Proposed Development site in Q3 2016 (once further baseline assessment has been completed) and a further one in Q1 2017, although this will depend on programme.

The consultant contracted to complete EIA will be responsible for Pre-Application Consultation as follows:

- Consultation strategy agreement with Development Partners
- Organising public exhibitions and venues (likely to be Strachan, Fettercairn or possibly Edzell)
- Producing all visualisations and exhibition boards in conjunction with Development Partners

Coriolis Energy Ltd have worked in close partnership with non-profit organisation Energy4All to promote our wind farm projects and further information on any investment opportunity for local people will be presented at the community exhibitions.

17.0 Scoping Consultation

Comments on the EIA Scoping Request are specifically welcome on:

- The proposed structure of the ES;
- Any effects which can be scoped out;
- The baseline and assessment methodology outlined;
- Any additional data sources that may be relevant; and
- Any additional consultees that should be contacted.

A list of consultees is provided in Appendix 4.

All responses to this EIA Scoping Opinion Request should be addressed to:

Energy Consents Unit
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU
econsentsadmin@scotland.gsi.gov.uk

If you wish to discuss the content of this Report or require any further information prior to responding, please contact James Baird at the above address or e-mail james.baird@coriolis-energy.com

Figures

Figure 1: Regional Context

Figure 2: Indicative Turbine Layout

Figure 3: Indicative Access from A90

Figure 4: Environmental Designations

Figure 5: National Landscape Constraints

Figure 6: ZTV

Appendices

Appendix 1: Pre-scoping Written Statement



Glendye Wind Farm
Pre-Scoping Written Statement
Scottish Government Energy Consents

On behalf of Glendye Wind Farm Ltd.

September 2015

Contents

1. Introduction
2. Site Details
3. Overview of the Proposal
4. Key Constraints
5. Anticipated Likely Significant Environmental Effects

Appendix 1 - Development Boundary

1.1 Introduction

- 1.1 This pre-scoping development brief has been prepared by Coriolis Energy Ltd on behalf of Glendye Wind Farm Ltd.
- 1.2 Glendye Wind Farm Limited is a project specific company formed by Coriolis Energy Ltd. (Coriolis), a leading independent wind energy development company which supports operators consent and build onshore wind farms in the UK. Its principals to date have been responsible for the successful development of some 17 wind farm projects with a combined capacity of more than 400MW. These range from a two turbine 3MW project in Lincolnshire, to a 24 turbine 55 MW project in Caithness. Ten of these wind farms are already in operation with the remainder either in procurement or under construction.
- 1.3 Over the past 8 years Coriolis has achieved consent for four wind farm projects totalling in excess of 100MW and has been actively involved in other projects totalling in excess of 200MW.
- 1.4 An application under Section 36 of the Electricity Act (1989) ('s36') for the proposed wind farm on the Glendye Estate is expected to be submitted to the Scottish Government's Energy Consents and Deployment Unit in spring 2017.
- 1.5 Studies and initial statutory consultee discussions commenced in 2011 (with Aberdeenshire Council, SNH and the RSPB) and having investigated a number of issues in significant detail, it is now proposed to progress matters towards Scoping. This brief has been prepared to provide further sufficient written information on the proposed Glendye Wind Farm proposal to allow stakeholders to provide meaningful feedback on the site and the key constraints in advance of a pre-scoping meeting with the Statutory Consultees, as set out below:
- The relevant Planning Authority
 - Scottish Natural Heritage
 - Scottish Environment Protection Agency
 - Any other relevant bodies with specific environmental responsibilities whom the Scottish Ministers consider are likely to have an interest.
- 1.6 The content of this brief will be set out as follows:
- Site Details - this section will set out the location of the site and details of the surrounding area
 - Overview of the Proposal – this section will present details of the currently proposed development form
 - Key Constraints – the key constraints which have been identified through site and desk based feasibility studies will be described.
 - Anticipated Likely Significant Environmental Effects – the section will set out any potential significant effects identified at this stage as well as any reasons why it is believed particular environmental impacts are likely to be scoped out of subsequent assessment work.

2. Site Details

- 2.1 The proposal is located on Glendye Estate, which sits upon the south west boundary of the Aberdeenshire local authority area where this bounds Angus Council. A plan of the Development area is provided in Appendix 1. The Development proposal sits within a vast smooth rolling plateau, which constitutes the change in landscape character between the lowland managed agricultural and settled landscape to the south and the Cairngorm mountain massif to the west.
- 2.2 The proposed development is largely remote from settlements and tourist/visitor attractions. Fettercairn in Aberdeenshire lies approx. 5.5km to the south east and Edzell in Angus is located 9km to the south west. The

Development is located within the landscape character area defined as 'The Mounth' within Aberdeenshire Council and SNH's landscape character assessments.

- 2.3 The Mounth is characterised by remote upland undulating plateau moorland with extensive areas of conifer plantation. The project site is used mainly for grouse estate management and grazing sheep.
- 2.4 The site is bounded by similar landscape character areas to the north, west and east:- open undulating plateau moorland. To the south the high ground falls away to the Howe of the Mearns agricultural lowlands area.
- 2.5 The turbine site elevation fluctuates between 300m a.s.l and 540m a.s.l with the southern ridge forming the high point of the site. The wider area is characterised by the hills of Clachnaben and Mount Battock to the north, the Glen Esk valley to the west and settled, more populated agricultural areas to the south and east. The wider area (within 5km of the project site) is sparsely populated and the lower ground to the south is characterised by farms and commercial forestry plantations. The nearest roads are the adopted but unclassified Glen Esk road running to the west and the B974 (the Cairn O'Mount road) to the east, which runs over high ground from Fettercairn to Banchory

3. Overview of the Proposals

3.1 The Glendye Wind Farm development infrastructures is likely to include:

- Wind turbines and associated infrastructure;
- Site entrance and access track from the B966;
- Internal and private access road network;
- Permanent meteorological masts;
- Borrow pits;
- Transformers and underground cables;
- Sub-station building; and
- One or more temporary construction compounds.

3.2 The turbines proposed for the site would have the following physical characteristics:

- Number of turbines: approximately 40 turbines (to be confirmed through EIA)
- Maximum Height to blade tip: up to 150m
- Individual turbine generating capacity: likely to be between 2.5 and 4 Megawatts (MW)
- Total generating capacity: likely to be between 87.5 and 140MW

3.3 Land use requirements during the construction phase would constitute a larger development footprint because of the need for one or more temporary construction compounds and the requirement for set down areas and crane hardstanding for turbine erection. Post construction a significant proportion of the land take would be reinstated.

3.4 The main construction processes and the nature, likely source and quantity of materials used during construction will be documented within the ES. It will also provide more detailed information on the physical characteristics of the entire development and the land use requirements during construction, operation, decommissioning and restoration.

3.5 With regard to abnormal load deliveries to the site, at this time Dundee is considered the likely port of entry (which was the point of entry for Mid Hill turbine components) and it is likely that abnormal loads will approach the site from the south by way of the A90, C2K and B966. Once on the Estate a combination of existing road surfaces, new access tracks and hill tracks would be used or upgraded to facilitate load delivery onto the development site.

4. Key Constraints

- 4.1 Coriolis recognizes that whilst the following constraints have been identified through feasibility studies, it is possible that baseline EIA studies may identify further constraints.
- 4.2 The following key constraints have been identified at this stage as will be explored in more detail below;
- Landscape and visual impacts;
 - Carbon rich soils and priority peatland habitats;
 - Ornithology;
 - The road network; and
 - Defence Interests

Landscape and visual impacts

- 4.3 The fundamental character of wind turbine development means that significant landscape effects are difficult or impossible to avoid and therefore all onshore wind farm developments are likely to lead to significant landscape and visual effects. However, significant effects are not necessarily unacceptable.
- 4.4 Therefore, landscape and visual effects must be considered a key constraint to any wind farm development. That said, the physical characteristics of the remote upland undulating plateau moorland at Glendye Estate is considered to be compatible with such development.
- 4.5 Section 4.2 .1 of The Strategic Landscape Capacity for Windfarms (2014) prepared by Ironside Farrar on behalf of Aberdeenshire Council and SNH highlights that Moorland Plateaux, aside from its south and east facing slopes, is of *'the lowest visibility in terms of development and this area would generally not be visible from settlements within a distance of 15km, reflecting the low population within this area'*. Likewise section 4.2.2 details that the same is found for visual impact from routes and that the least visible areas from viewpoints lie within Moorland areas.
- 4.6 The study sets out that, *'the least visible areas may have capacity to conceal turbines or site them away from most receptors'*. The study also details that, in terms of visibility the area of lowest visibility is the Moorland Plateaux (because of distance from population centres and transport routes) but counters this by detailing that it forms a backdrop to the agricultural/settled areas of Aberdeenshire and is in the foreground of views from the National Park.
- 4.7 There are no national landscape designations on or within approx. 9km of the site.
- 4.8 Notwithstanding the above, landscape and visual effects will be a key constraint which will be assessed as part of EIA.

Ornithology

- 4.9 Ornithological surveys began on site in April 2012 with raptor and black grouse surveys and also Breeding Bird Surveys. Four vantage points were established in June 2012 in agreement with SNH/RSPB with a 5th added in April 2013. All surveys have been carried out in accordance with SNH guidelines and best practice.
- 4.10 Breeding bird surveys were carried out in 2012 and 2013 but not 2014. A further breeding bird survey was completed in 2015 to ensure a full suite of data is available to statutory consultees.

- 4.11 The Site has been found to contain potentially sensitive nesting species such as merlin and golden plover. However, survey results to date have not identified any further species of note nesting and breeding on site.
- 4.12 The development site is located 11km south east of the Glen Tanar SAC which lies within the Cairngorm's National Park. This is designated for blanket bog, Caledonian Forest, dry heaths and wet heathland with cross-leaved heath and otters. Glen Tanar is also a National Nature Reserve, a SSSI and an SPA for birds such as capercaillie, hen harrier, osprey and Scottish crossbill. Given the distances involved the project is not expected to impact on this designated area. Surveys to date have recorded relatively low numbers of hen harrier, golden eagle and osprey flights and no capercaillie or Scottish crossbill.
- 4.13 There is no clear evidence that species from designated sites are using the Proposed Development site. Survey to date has focused on recording and assessing the impacts on wider countryside species.
- 4.14 The majority of the Proposed Development site is managed extensively for grouse shooting and surveys carried out on the site have identified large numbers of black grouse lower down the plateau. RSPB detail that there is a single golden eagle nest within 10km of the Estate boundary (at an unspecified location) however there have been relatively few eagle sightings thus far, all of a single 1st year female. In addition, there have been sightings of short-eared owl, red kite, peregrine, curlew, ring ouzel and greylag and pink footed geese, though in general, flights recorded have been recorded in low numbers.
- 4.15 Notwithstanding the above, ornithology is a key constraint to wind farm development and will be assessed accordingly for significant impacts as part of EIA.

Carbon rich soils and priority peatland habitats

- 4.16 Draft SNH 'Carbon-rich Soil, Deep Peat and Priority Peatland Habitats Map' indicates that the Proposed Development site is located primarily within Class 1 suggesting the existence of priority peatland habitats, carbon-rich soils and deep peat. This is of particular importance as Table 1 of SPP requires planning authorities to map carbon rich soils, deep peat and priority peatland habitat and to afford these areas significant protection.
- 4.17 However, SNH guidance 'Spatial Planning for Onshore Wind Turbines – natural heritage considerations' (2015) sets out that *"the location of a proposal in the mapped area does not, in itself, mean that the proposal is unacceptable, or that carbon rich soils, deep peat and priority peatland habitat will be adversely affected. The quality of peatland tends to be highly variable across an application site and a detailed assessment is required to identify the actual effects of the proposal, and to inform the location of site infrastructure"*.
- 4.18 As such, initial habitat walkover surveys conclude that there is peat present on site. A detailed picture of peat coverage, depth and sensitivity and site hydrogeology, through site surveys, will be carried out as part of EIA.
- 4.19 A desk-based evaluation of site conditions, including publically available information on peat depth and condition, physical conditions influencing peat characteristics (elevation, slope angle, geology) and an aerial photograph based interpretation of peatland geomorphology undertaken specifically for the Proposed Development site has already been carried out.
- 4.20 In addition, field-based preliminary peat probing, including consideration of depth variation across the site and peatland condition has already been carried out. Onsite peat depth analysis to date has found that the peatlands at Glendye could be regarded as slightly deeper than typical peatlands in this part of Scotland.
- 4.21 A Second Phase reconnaissance peat survey is programmed for October 2015.

Access

- 4.22 With regard to abnormal load deliveries to the site, a full route assessment will be undertaken on the proposed access route in order to identify the suitability of the route and confirm any required mitigation works. At this time Dundee is considered the likely port of entry (which was the point of entry for Mid Hill turbine components) and it is likely that abnormal loads will approach the site from the south by way of the A90, C2K and B966. The detail of the proposed access route and associated mitigation will be the subject of consultation with Transport Scotland, Dundee City Council and Aberdeenshire Council roads officers.
- 4.23 Once on the Estate a combination of existing road surfaces, new access tracks and hill tracks would be used or upgraded to facilitate load delivery onto the Proposed Development site.
- 4.24 At this stage route assessment and swept path analysis has indicated that the route is feasible subject to the implementation of mitigation measures however these require third party land agreements (which are in place) and modifications to be agreed with Dundee City Council, Aberdeenshire Council and Transport Scotland. In particular, it is likely that further mitigation in addition to that carried out for Mid Hill wind farm abnormal loads would be required in and around Dundee, if larger components were to be used.

Defence Interests

- 4.25 An objection may be received from the MOD on the basis of radar impacts on RAF Leuchars and/or RAF Buchan. RAF Leuchars representatives have recently withdrawn objections to other wind farm proposal in the area on the basis that the squadrons based at Leuchars have now moved to Lossiemouth in Moray and tactical training out of Leuchars has/will stop. Lossiemouth is outwith the 80km consultation zone for air defence radar facilities.
- 4.26 The MOD has objected to most wind farm applications in Aberdeenshire due to the potential impact on RAF Buchan. Due to the distance involved and the precedent established with nearby schemes it is considered unlikely that an objection against Glendye could be sustained. In 2014 it was announced that the Buchan radar will be upgraded to a Lockheed Martin TPS-77 remote radar (RRH) specifically to mitigate impacts from a number of closer wind farm schemes, however it is noted that the MOD has recently objected to the Glens of Foudland extension near Huntly, despite the EIA finding that there would be no significant effects.

5. Anticipated Likely Significant Effects

- 5.1 At this stage significant direct effects are anticipated on the host landscape character sub unit – The Mounth.
- 5.2 It is also likely that there will be significant and unavoidable effects on some locally important viewpoints including Clachnaben (a popular local hill walk) and Maule Monument (grade B listed building situated at the summit of Hill of Rowan with no topographical or vegetative screening).
- 5.3 No other significant effects are anticipated at this time.
- 5.4 At this time, it is unlikely that any potential impacts could be scoped out of the assessment.
- 5.5 We would welcome any feedback from Aberdeenshire Council on the level of community engagement, if any, that they would recommend at this stage of the process.

Appendix 2: Consultation response to Pre-scoping Written Statement

marine scotland
science



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Scottish Government
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G2 8LU



Our ref: FL/5-7
November 17th 2015

Dear Stephen,

GLENDYE WIND FARM, ABERDEENSHIRE

Thank you for seeking comment from Marine Scotland Science (MSS) at the pre-scoping stage of the application of the proposed Glendye wind farm. MSS will not attend the forthcoming meeting but we wish to highlight some issues which the developer should consider at this stage of the application process.

Watercourses, within and downstream of the proposed development area, support salmon populations. Salmon is listed in the European Habitats Directive and should therefore be given due consideration throughout the course of the development. Our generic scoping guidelines can be consulted for further information

<http://www.gov.scot/Topics/marine/Licensing/marine/guidance>

<http://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren>.

In order to assess the potential impact of the proposed development on fish populations we recommend the developer to carry out site characterisation surveys of water quality, macroinvertebrate and fish populations of watercourses likely to be impacted as a result of the development. These surveys can inform the developer as to appropriate site-specific mitigation measures and monitoring programmes, if required. Our generic monitoring programme document provides full details regarding site characterisation surveys and monitoring programmes. <http://www.gov.scot/Topics/marine/Licensing/marine/guidance>

Freshwater Laboratory, Faskally, Pitlochry, Perthshire, PH16 5LB
www.gov.scot/marinescotland



<http://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshore/en>.

The results of the site characterisation surveys and full details regarding proposed monitoring programmes should be presented in the Environmental Statement.

Kind regards,

Dr Emily E. Bridcut.

Freshwater Laboratory, Faskally, Pitlochry, Perthshire, PH16 5LB
www.gov.scot/marinescotland



From: Matthew Taylor [REDACTED]
Sent: 17 November 2015 10:00
To: McFadden S (Stephen)
Cc: Deirdre Straw
Subject: RE: Glendye Wind Farm proposal - Pre Scoping discussion

Hi Stephen

My apologies for the delay in providing a response.

I have discussed the pre-scoping information with our landscape architect. Having considered the nature and location of the proposal in relation to the Park boundary, CNPA have no comments to make at this time and will not attend the pre-scoping discussion meeting.

Kind Regards

Matthew Taylor
Planning Officer (Development Management)
Cairngorms National Park Authority
14 The Square
Grantown-on-Spey
PH26 3HG



Our ref: PCS/143720
Your ref:

If telephoning ask for:
Alison Wilson

18 November 2015

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

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

Dear Mr McFadden

Glendye Wind Farm – Application for s36 consent – Pre-Scoping discussion

Thank you for consulting SEPA for scoping advice relating to the above development proposal by way of your e-mail which we received on 13 November 2015. Unfortunately a representative from SEPA will not be able to attend the pre-scoping discussion meeting on 20 November 2015. However we have provided written advice below and would be happy to follow up any queries you have regarding this. Please note the advice below.

Windfarm developments can make a valuable contribution to achieving Scotland's renewable targets and help fulfil public sector duties under the Climate Change (Scotland) Act 2009.

We have reviewed the submitted pre-scoping brief, and based on the limited information available, we consider that the issues set out below should be addressed through the Environmental Impact Assessment process.

While all of the issues below should be addressed in the Environmental Statement (ES), there may be opportunities for several of these to be scoped out of detailed consideration. The justification for this approach in relation to specific issues should be set out within the ES. We would welcome the opportunity to comment on the draft ES. Please note that we can process files only of a maximum size of 25MB and therefore, when the ES is submitted, it should be divided into appropriately sized and named sections.

1. Carbon balance

- 1.1 Scottish Planning Policy (SPP) states (Paragraph 205) that "Where peat and other carbon rich soils are present, applicants should assess the likely effects of development on carbon dioxide (CO₂) emissions. Where peatland is drained or otherwise disturbed, there is liable to be a release of CO₂ to the atmosphere. Developments should aim to minimise this release." The ES or planning submission should include a) a summary demonstrating how the development has been designed with regards to layout and mitigation to minimise release of CO₂ and b) preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage



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David Sigsworth
Chief Executive
Terry A'Hearn

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channels, cable trenches, or the storage and re-use of excavated peat. A detailed peat management scheme setting out these measures may be required through a planning condition to ensure that the carbon balance benefits of the scheme are maximised. We do not validate carbon balance assessments, but our advice on peat management options may need to be taken into consideration when you consider such assessments.

2. Disruption to wetlands including peatlands and Groundwater Dependant Terrestrial Ecosystems (GWDTE)

- 2.1 We note that an initial habitat walkover survey has taken place. We would be happy to review this and provide advice and guidance.
- 2.2 SEPA has a responsibility to protect GWDTE, which are types of wetland protected under the Water Framework Directive. Foundations, borrow pits and linear infrastructure such as roads, tracks and trenches can disrupt groundwater flow and impact upon these sensitive receptors.
- 2.3 Mapping and subsequent avoidance of GWDTE in development proposals will avoid delay and expense to the developer both during the project and after construction. Avoidance removes the need for further assessment, mitigation, monitoring and potential remediation.
- 2.4 Please refer to Appendix 3 of guidance note [Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems](#) for the minimum mapping information we require to be submitted. Unless the overlaid maps identified in Appendix 3 are submitted it is likely that the scheme will be subject to an objection.
- 2.5 In order to assess the potential risk to GWDTE a Phase 1 habitat survey must be carried out within the following distances of development as a minimum:
- a) within 100m radius of all excavations shallower than 1m
 - b) within 250m of all excavations deeper than 1m

If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it. The guidance SNIFFER (2009) WFD95 - [A Functional Wetland Typology for Scotland](#) can be used to help identify wetland types.

- 2.6 A National Vegetation Classification (NVC) survey should be completed for any wetlands identified (it may be that an NVC survey has been requested by, for example, SNH). A list of NVC communities that may be dependent on groundwater can be found in Appendix 4 of the guidance note [Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems](#).
- 2.7 A detailed site specific qualitative and/or quantitative risk assessment will be required within the ES or supporting information in the following higher risk situations:-
- a) for proposed infrastructure within 250 m of GWDTE, where the infrastructure will require excavation deeper than 1m. Typically, this includes borrow pits and turbine foundations but may include access roads and other infrastructure.

- b) for excavations within 100 m of GWDTE but shallower than 1m if the applicant will not accept a detailed long term monitoring planning condition.

Refer to guidance note [Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems](#) for further information on carrying out a detailed risk assessment and the requirements of the detailed long term monitoring condition.

- 2.8 The checklist form provided in Appendix 2 of this letter must be completed and submitted with the above information.

3. Disturbance and re-use of excavated peat

- 3.1 We note that some initial habitat surveys, desk based evaluation and some preliminary field based studies have been undertaken. We would be happy to review these initial assessments and provide advice and guidance. If this would be helpful at this stage, please submit them to us for review.

- 3.2 Where the proposed infrastructure will impact upon peatlands it is important to limit the volume of peat being disturbed so that commonly experienced difficulties in dealing with extracted surplus peat are reduced. The submission must include:

- a) A detailed map of peat depths (this must be to full depth) with all the built elements (including peat storage areas) overlain so it can clearly be seen how the development avoids areas of deep peat and other sensitive receptors such as GWDTE.
- b) A table which details the quantities of acrotelmic, catotelmic and amorphous peat which will be excavated for each element and where it will be re-used during reinstatement. Details of the proposed widths and depths of any peat to be re-used and how it will be kept wet must be included.

- 3.3 To avoid delay and potential objection proposals must be in accordance with [Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste](#) and our [Regulatory Position Statement – Developments on Peat](#). A Peat Balance Table example has been included in Appendix 1 to assist the applicant.

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

4. Existing groundwater abstractions

- 4.1 SEPA has a responsibility to protect groundwater abstractions. Foundations, borrow pits and linear infrastructure such as roads, tracks and trenches can disrupt groundwater flow.
- 4.2 Mapping and subsequent avoidance of groundwater abstractions in development proposals will avoid delay and expense to the developer both during the project and after construction. Avoidance removes the need for further assessment, mitigation, monitoring and potential remediation.
- 4.3 All groundwater abstractions within the following distances of development need to be identified, in order to assess potential risk:

- a) within 100m radius of all excavations shallower than 1m
- b) within 250m of all excavations deeper than 1m

- 4.4 Please refer to Sections 2.6-2.9 and Appendix 3 of guidance note [Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems](#) for the minimum mapping information we require to be submitted. Unless the overlaid maps identified in Appendix 3 are submitted it is likely that the scheme will be subject to an objection.
- 4.5 A detailed site specific qualitative and/or quantitative risk assessment will be required within the ES or supporting information in the following higher risk situations:-
- a) for proposed infrastructure within 250 m of groundwater abstractions, where the infrastructure will require excavation deeper than 1m. Typically, this includes borrow pits and turbine foundations but may include access roads and other infrastructure.
 - b) for excavations within 100 m of groundwater abstractions but shallower than 1m if the applicant will not accept a detailed long term monitoring planning condition.

Refer to guidance note [Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems](#) for further information on carrying out a detailed risk assessment and the requirements of the detailed long term monitoring condition.

- 4.6 The checklist form provided in Appendix 2 of this letter must be completed and submitted with the above information.

5. Engineering activities in the water environment

- 5.1 In order to meet the objectives of the [Water Framework Directive](#) of preventing any deterioration and improving the water environment, developments should be designed to avoid engineering activities in the water environment wherever possible. The water environment includes burns, rivers, lochs, wetlands, groundwater and reservoirs. We require it to be demonstrated that every effort has been made to leave the water environment in its natural state. Engineering activities such as culverts, bridges, watercourse diversions, bank modifications or dams should be avoided unless there is no practicable alternative. Paragraph 255 of SPP deters unnecessary culverting. Where a watercourse crossing cannot be avoided, bridging solutions or bottomless or arched culverts which do not affect the bed and banks of the watercourse should be used. Further guidance on the design and implementation of crossings can be found in our [Construction of River Crossings Good Practice Guide](#). Other best practice guidance is also available within the water [engineering](#) section of our website.
- 5.2 Our preference would be for underground cables to cross watercourses by boring beneath the bed of the watercourse. The local operations team should be contacted if further advice is required on proposed engineering works in the water environment as authorisation may be required under the Controlled Activities Regulations (CAR) for example if there is a requirement for any of the underground cables to cross a watercourse.
- 5.3 If the engineering works proposed are likely to result in increased flood risk to people or property then a flood risk assessment should be submitted in support of the planning application and we should be consulted as detailed below.

5.4 A site survey of existing water features and a map of the location of all proposed engineering activities in the water environment should be included in the ES or planning submission. A systematic table detailing the justification for the activity and how any adverse impact will be mitigated should also be included. The table should be accompanied by a photograph of each affected water body along with its dimensions. Justification for the location of any proposed activity is a key issue for us to assess at the planning stage.

5.5 Where developments cover a large area, there will usually be opportunities to incorporate improvements in the water environment required by the Water Framework Directive within and/or immediately adjacent to the site either as part of mitigation measures for proposed works or as compensation for environmental impact. We encourage applicants to seek such opportunities to avoid or offset environmental impacts. Improvements which might be considered could include the removal of redundant weirs, the creation of buffer strips and provision of fencing along watercourses. Fencing off watercourses and creating buffer strips both helps reduce the risk of diffuse water pollution and affords protection to the riparian habitat. In addition, if found on site, consideration will also need to be given to preventing the spread of invasive non-native species (for example North American signal crayfish, Japanese knotweed, giant hogweed, rhododendron and Himalayan balsam).

6. Water abstraction

6.1 Where water abstraction is proposed we request that the ES, or planning submission, details if a public or private source will be used. If a private source is to be used the information below should be included. Whilst we regulate water abstractions under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended), the following information is required at the planning stage to advise on the acceptability of the abstraction at this location:

- Source e.g. ground water or surface water;
- Location e.g. grid reference and description of site;
- Volume e.g. quantity of water to be extracted;
- Timing of abstraction e.g. will there be a continuous abstraction;
- Nature of abstraction e.g. sump or impoundment;
- Proposed operating regime e.g. details of abstraction limits and hands off flow;
- Survey of existing water environment including any existing water features;
- Impacts of the proposed abstraction upon the surrounding water environment.

6.2 If other development projects are present or proposed within the same water catchment then we advise that the applicant considers whether the cumulative impact upon the water environment needs to be assessed. The ES or planning submission should also contain a justification for the approach taken.

7. Pollution prevention and environmental management

7.1 One of our key interests in relation to major developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. The construction phase includes construction of access roads, borrow pits and any other site infrastructure.

7.2 We advise that the applicant should, through the EIA process or planning submission, systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the principles of preventative measures and mitigation. This will establish a robust environmental

management process for the development. A draft Schedule of Mitigation should be produced as part of this process. This should cover all the environmental sensitivities, pollution prevention and mitigation measures identified to avoid or minimise environmental effects. Please refer to the [Pollution prevention guidelines](#).

- 7.3 A Construction Environmental Management Document is a key management tool to implement the Schedule of Mitigation. We recommend that the principles of this document are set out in the ES outlining how the draft Schedule of Mitigation will be implemented. This document should form the basis of more detailed site specific Construction Environmental Management Plans which, along with detailed method statements, may be required by planning condition or, in certain cases, through environmental regulation. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract (just before development commences).
- 7.4 This will be particularly important for this development as there are many watercourses contained within the site boundary so much of the infrastructure is likely to be near to a watercourse. The Water of Charr, Water of Dye and Kettock Burn are 3 main stem rivers, all with associated tributaries. These 3 watercourses join the Water of Dye at the northern boundary of the site, which is part of the River Dee SAC and so must be protected throughout all stages of the development, particularly during construction. There are downstream users of the water environment also in this area, again reinforcing the requirement for robust pollution mitigation throughout development. All watercourses on the site should be identified in the EIA, and from that a robust CEMP created to ensure protection.
- 7.5 The Pre-Scoping Written Statement makes reference to new and upgraded access tracks and hill tracks. Along with the site entrance and substation building these features will require SUDS for treatment of surface water run-off, as will any other areas of hardstanding. In addition details will be required on drainage proposals for the temporary construction compound.
- 7.6 We would refer you to best practice advice prepared by SNH, SEPA and the windfarm industry [Good Practice During Windfarm Construction](#). Additionally, the Highland Council (in conjunction with industry and other key agencies) has developed a guidance note [Construction Environmental Management Process for Large Scale Projects](#).

8. Borrow pits

- 8.1 We note that the development infrastructure is likely to include borrow pits. Scottish Planning Policy (SPP) states (Paragraph 243) that "Borrow pits should only be permitted if there are significant environmental or economic benefits compared to obtaining material from local quarries, they are time-limited; tied to a particular project and appropriate reclamation measures are in place." The ES or planning submission should provide sufficient information to address this policy statement.
- 8.2 Additionally, a map of all proposed borrow pits must be submitted along with a site specific plan of each borrow pit detailing the:
- Location, size, depths and dimensions of each borrow pit;
 - Existing water table and volumes of all dewatering;

- c) Proposed drainage and settlement traps, turf and overburden removal and storage areas;
 - d) Restoration profile, nature and volume of infill materials, and, if wetland features form part of the restoration, 25 year management proposals.
- 8.3 The impact of such facilities (including dust, blasting and impact on water) must be assessed in accordance with [Planning Advice Note PAN 50 Controlling the Environmental Effects of Surface Mineral Workings](#) (Paragraph 53). In relation to groundwater, information (Paragraph 52 of PAN 50) only needs to be provided where there is an existing abstraction or GWDE within 250 m of the borrow pit.

9. Flood risk

- 9.1 The site should be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 254-268). The [Flood Maps for Scotland](#) are available to view online and further information and advice can be sought from your local authority technical or engineering services department and from our [website](#). If a flood risk is identified then a Flood Risk Assessment should be carried out following the guidance set out in the document [Technical flood risk guidance for stakeholders](#).
- 9.2 The wind farm proposal appears to be in an upland area with no sensitive receptors in relation to flood risk close by. There are several water courses within the site boundary which may be a source of flood risk to the development however there is unlikely to be an increase in flood risk elsewhere. As such, if formally consulted through the planning process on the proposed development, we would be unlikely to object on flood risk grounds based on the information supplied with this consultation. Notwithstanding this we would expect Aberdeenshire Council to undertake their responsibilities as the Flood Prevention Authority.
- 9.3 Given the above an adequate buffer strip should be maintained between the top of the bank of all watercourses and any development to allow natural watercourse migration and to reduce the impact of any overtopping. A buffer would also ensure adequate watercourse access for maintenance assessment and ensure bank stability.
- 9.4 Additionally, the development should not result in an increase in surface water runoff rates or volumes which could cause downstream flood risk to be exacerbated. Appropriate surface water drainage should be applied during both the construction and maintenance phase.
- 9.5 As this early stage the layout of the proposed wind farm has not been provided however, as per section 5.2 above, any proposed watercourse crossings should be designed to address flood risk and details provided in the ES or planning submission.
- 9.6 Our pre-application advice relies on the accuracy and completeness of the information supplied with this consultation. Should finalised development proposals differ in any future planning application we reserve the right to alter our position if we are of the opinion that such proposals would not meet with the principles of Scottish Planning Policy.
- 9.7 The SEPA Flood Maps have been produced following a consistent, nationally-applied methodology for catchment areas equal to or greater than 3km² using a Digital Terrain Model (DTM) to define river cross-sections and low-lying coastal land. The maps are indicative and designed to be used as a strategic tool to assess flood risk at the community

level and to support planning policy and flood risk management in Scotland.. For further information please visit http://www.sepa.org.uk/flooding/flood_maps.aspx.

10. Decommissioning / Repowering

- 10.1 SEPA is currently considering the waste regulatory position of material such as rubble, foundations and cabling which may be reused or abandoned on site during decommissioning or repowering. Any proposal to discard materials that are likely to be classed as waste would be unacceptable under current waste management licensing and under waste management licensing at time of decommissioning if a similar regulatory framework exists at that time. Further guidance on this may be found in the document [Is it waste - Understanding the definition of waste](#).
- 10.2 The EIA process should take this waste regulatory position, and the need to demonstrate waste minimisation, into account from the outset in designing the layout and in developing the general principles for the site of decommissioning or repowering. We welcome the commitment within the Pre-Scoping Written Statement to "provide more detailed information on the physical characteristics of the entire development and the land use requirements during construction, operation, decommissioning and restoration."

11. Regulatory advice for the applicant

- 11.1 Details of regulatory requirements and good practice advice for the applicant can be found on the [Regulations section](#) of our website. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at: Inverdee House, Baxter Street, Torry, Aberdeen, AB11 9QA, Tel: 01224 266600.

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

Yours sincerely

Alison Wilson
Senior Planning Officer
Planning Service

Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at the planning stage. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. If you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found in [How and when to consult SEPA](#), and on flood risk specifically in the [SEPA-Planning Authority Protocol](#).

Appendix 1: Example Peat Balance Table Example

		Upgraded access tracks	New 'cut' access tracks	Turbine bases	Handstandings	Borrow pit	Substation	Construction compound	Cabling	Total
Excavation	Plan area									
	Depth of acroteim excavated									
	Depth of catoteim excavated									
	Volume of Acroteim excavated									
	Volume of Catoteim excavated									
	Total excavation/ volume									
Re-Use Requirement	Length or depth									
	X-area or plan area									
	Vol									
Construction Re-use/Reinstatement	Acroteim re-used inc width and depth									
	Catoteim re-used inc width and depth									
	Total initial re-use									
Temporary storage	Acroteim stored									
	Catoteim stored									
	Total stored									
Final re-use	Acroteim re-used inc width and depth									
	Catoteim re-used inc width and depth									
	Total initial re-use									
Balance	Acroteim balance									
	Catoteim balance									
	Overall balance									

Appendix 2: Checklist for Submitted Information - Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (GWDTE)

	Information Requirements	Circle to confirm	ES reference: Figure / Section	SEPA Actions
1	Plans showing <u>all</u> proposed infrastructure, including temporary works	Yes		If not provided – SEPA will object due to lack of information and request the required plans
2	Plans overlain with details of the extent and depths of all proposed excavations	Yes		If not provided – SEPA will object due to lack of information and request the required plans
3	Plans show the relevant specified buffer zones (100m and 250m)	Yes		If not provided – SEPA will object due to lack of information and request the required plans
4	Plans overlain with source of groundwater abstractions: - all groundwater abstractions within 100m radius of all excavations shallower than 1m - all groundwater abstractions within 250m of all excavations deeper than 1m Or statement provided to confirm none	Yes		If not provided - SEPA will object due to lack of information and request the required plans
5	Plans overlain with GWDTE (Phase 1 habitat survey) data: - within 100m radius of all excavations shallower than 1 m; - within 250m of all excavations deeper than 1m. Or statement provided to confirm none	Yes		If not provided – SEPA will object due to lack of information and request the required plans
6	Applicant confirmation of one of following (as shown on above plans): i) no groundwater abstractions and GWDTE on site; ii) groundwater abstractions and/or GWDTE identified and 250m buffer zones implemented iii) confirmation that the groundwater abstraction owners have agreed contingency plans including temporary or permanent replacement of a groundwater supply.	Yes		If confirmed SEPA will request condition A (maintenance of buffer zones) as specified in SEPA guidance note Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems
7	Applicant can confirm above plans show excavations or intrusions within 100m buffer zone are shallower than 1m	Yes		If confirmed SEPA will request condition B (monitoring) as set out in above guidance
8	Applicant can confirm above plans show excavations or intrusions are on/in a groundwater abstraction or GWDTE	Yes		If confirmed SEPA will require a bespoke risk assessment
9	Applicant can confirm infrastructure involves excavations deeper than 1m within 250m of sensitive receptors or unable to comply with monitoring requirements of Condition B	Yes		If confirmed SEPA will require a bespoke risk assessment
10	Bespoke risk assessment provided	Yes		SEPA will provide a bespoke response
Signature:		Organisation:		Date:



Our ref: PCS/143800

Your ref:

If telephoning ask for:

Zoe Griffin

James Baird
Coriolis Energy
Suite 406-407
Baltic Chambers
50 Wellington Street
Glasgow
G2 6HJ

3 December 2015

By email only to: [REDACTED]

Dear Mr Baird

Glendye Wind Farm – Application for s36 consent – Review of Preliminary Studies

Thank you for consulting SEPA on the Preliminary Studies undertaken in relation to the above development proposal by way of your e-mail which we received on 19 November 2015.

We confirm we received the following documents for review:

Glendye 1st and 2nd Iteration Model Comparison

Glendye Priority Peatland and other Habitats 20151117

Peat condition assessment for the Glendye Estate Report No AMG/10/CO/1

We have already reviewed and commented on the submitted pre-scoping brief in our letter dated 18 November 2015. After reviewing the above documents we would highlight that we still require all that was asked for at scoping.

Our previous comments should therefore be read in conjunction with those below:

Carbon balance

We welcome the initial work undertaken by the applicant in terms of peat depth surveys and peat condition. We look forward to these now being used in the ES or planning submission to demonstrate how the development has been designed with regards to layout and mitigation to minimise release of CO₂ and the preventative/mitigation measures to avoid significant drying or oxidation of the peat. As stated previously a detailed peat management scheme setting out mitigation measures is likely to be required to ensure that the carbon balance benefits of the scheme are maximised.

Disruption to wetlands including peatlands and Groundwater Dependant Terrestrial Ecosystems (GWDTE)

With regard to the *Priority Peatland and other Habitats Survey & Assessment* we have the following comments.

- a) Table 1 does not accurately reflect all GWDTEs (moderate and highly dependent ones) as indicated in our guidance note Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. M15 and also U6 should also be listed in this table. The text does go onto argue that perhaps M6, M23 and U6 are of no or low to moderate groundwater dependent which maybe the case but in the first instance, we are still asking, that for these GWDTEs, appropriate overlaid maps are provided (please see Section 2.4 of scoping and link and ref to Appendix 3) for further analysis .
- b) Although a lot of information has been provided on peat depth, much of for what we ask for in section 3 of our previous response on disturbance and re-use of excavated peat will still be required (see also section 3 below in this letter).
- c) We reiterate that full mapping and subsequent avoidance of GWDTEs in development proposals will avoid delay and expense to the developer both during the project and after construction. Avoidance removes the need for further assessment, mitigation, monitoring and potential remediation.

Disturbance and re-use of excavated peat

After reviewing the most recent documents we note that the proposed infrastructure is likely to take place on areas of peat and such we refer you to our previous comments in Section 3 of our letter dated 18 November 2015 in this regard.

The peat information you have gathered now needs to be used in the scoping study to guide the location of the different elements of the proposed development. As stated in 3.2 a) of our previous letter, the peat depth maps need to be overlain with the development/layout plan in order to help guide you away from any sensitive receptors such as deep peat and GWDTEs. The final planning submission will require these to show clearly how the development avoids these.

3.3 As stated in 3b) of our previous response, quantitative information of peat will also be required.

3.4 Given the scale of the proposal and the potential volume of peat to be moved at the site we would request that a full Peat Waste Management Plan is submitted to us along with a Site Waste Management Plan to cover any other wastes which may arise as a result of the works being carried out as early as practical in the EA process for our appraisal. Please refer back to paragraph 3.5 in our previous letter for details of what we will expect in these documents.

3.5 With regard to any regulatory issues, we would also recommend that the peat stays on site rather than the peat being taken to any exempt site as this may cause implications for the exempt site in the future.

3.6 We note that the Peat condition assessment for the *Glendye Estate Report No AMG/10/CO/1* outlines what any excavated peat could be used for including a gully restoration project. Further detail is required on this in a peat management plan with links with habitat management plan (where habitat restoration in relation to gully restoration is planned). We will require further assessment of the peat re-use at next stage of consultation.

The water environment – pollution prevention and engineering works

Report No AMG_10_C01_Final appears to have identified all the main water bodies found within the site boundary, as well as the minor tributaries and drainage channels associated with them. These must be fully protected throughout all stages of development of the windfarm, addressed through a Construction Environmental Management Document, see section 6 of our letter dated 18 November 2015. We also refer you to section 5 for how we will expect the water environment to be protected and improved throughout the developments construction and lifespan.

The *Glendye Priority Peatland and other Habitats* document identifies on page 20 that the loss of peat and the overlying vegetation cover can lead to a reduction in water quality through discolouration and sedimentation. The ES will need to address how this will be mitigated against during development of the windfarm which will include invariably involve removal of peat.

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

Yours sincerely

Zoe Griffin
Senior Planning Officer
Planning Service

E-copy to: Stephen.McFadden@gov.sco

Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at the planning stage. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. If you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found in [How and when to consult SEPA](#), and on flood risk specifically in the [SEPA-Planning Authority Protocol](#).

Development Management and Strategic Road Safety
Trunk Road and Bus Operations

Buchanan House, 58 Port Dundas Road, Glasgow G4 0HF



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

Your ref:
Section 36

JMP ref:
TS00422

Date:
3/11/2015

Dear Sirs,

**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND)
REGULATIONS 2000 SECTION 36**

GLENDYE WIND FARM – APPLICATION FOR S36 CONSENT PRE-SCOPING DISCUSSION

With reference to your recent correspondence on the above development, we acknowledge receipt of the pre-scoping Written Statement (WS) prepared by Coriolis Energy in support of the above development.

This information has been passed to JMP Consultants Limited for review in their capacity as Term Consultant to Transport Scotland – Trunk Road and Bus Operations (TRBO). Based on the review undertaken, Transport Scotland would provide the following comments.

Proposed Development

The development comprises approximately 40 turbines with a blade to tip height of up to 150m, located on the Glendye Estate, Aberdeenshire. The site is approximately 5.5km north of Fettercairn, with the nearest trunk road being the A90(T) some 14km to the east. The total generating capacity of the wind farm is likely to be between 87.5 and 140MW.

Proposed Abnormal Load Route

We note that Dundee is considered the likely port of entry for the turbine components and it is likely that abnormal loads will approach the site from the south by way of the A90(T), C2K and B966. The WS indicates that a full abnormal loads route assessment will be undertaken to determine any required mitigation works. This is considered acceptable at this stage, however, given that the Trunk Road forms part of the proposed route, we would ask that this assessment considers the movement of abnormal loads to site including swept path analysis at key pinch points, any mitigation measures required including the temporary removal of street furniture, any proposed junction widening, traffic management etc to ensure that the movement of these loads will not have any detrimental effect on structures within the trunk road route path.

Assessment of Environmental Impacts

With regard to the potential environmental impacts of traffic generated by the development on receptors adjacent to the trunk road network, there are a number of issues which should be taken into consideration when assessing the merits of the development.

The Environmental Statement (ES) should provide information with regard to the construction and operational stages of the development. The information provided should include the preferred route options for the movement of any heavy loads along with an estimate of vehicle trip generation from the site and an indication of distribution / assignment of these trips.

Potential trunk road related environmental impacts such as driver delay, severance, pedestrian amenity, safety etc should be considered and assessed where appropriate (i.e. where the thresholds within the Institute of Environmental Management and Assessment (IEMA) Guidelines for further assessment are breached). These specify that road links should be taken forward for assessment if:

- Traffic flows will increase by more than 30%, or
- The number of HGVs will increase by more than 30%, or
- Traffic flows will increase by 10% or more in sensitive areas.

In the case of the ES, the methods adopted to assess the likely traffic and transportation impacts on traffics flows and transportation infrastructure should comprise:

- Determination of the baseline traffic and transportation conditions, and the sensitivity of the site and existence of any receptors likely to be affected in proximity of the trunk road network;
- Review of the development proposals to determine the predicted construction and operational requirements; and
- Assessment of the significance of predicted impacts from these transport requirements, taking into account impact magnitude (before and after mitigation) and baseline environmental sensitivity.

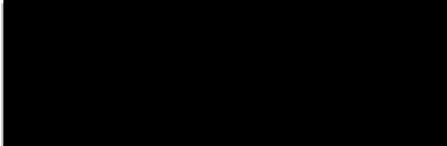
Given the distance to the trunk road network, it is acknowledged that the development may not trigger the need for detailed assessment but the above threshold assessment approach should be undertaken to determine if further detailed work is required.

Noise and Air Quality

It is unlikely that trunk road receptors would be subject to any adverse air quality or noise impacts as a direct result of the development. It is therefore, not considered necessary to provide any further information in this regard.

I trust that the above is satisfactory and should you wish to discuss any issues raised in greater detail, please do not hesitate to contact Jason Gillespie at JMP's Glasgow Office on 0141 226 6939.

Yours faithfully



John McDonald

Transport Scotland
Trunk Road and Bus Operations

cc Jason Gillespie - JMP Consultants Ltd

Appendix 3: Minutes of Pre-Scoping meeting (including amendments)

Good afternoon all

Thank you for attending last Friday's pre scoping discussion at the offices of Aberdeenshire Council in Stonehaven.

The following is from the brief notes I took:

Aberdeenshire Council wanted consideration of the Burn Garden Design Landscape (GDL). Further details of the Burn GDL can be found at <http://portal.historic-scotland.gov.uk/hes/web/f?p=PORTAL:DESIGNATION::::DES:GDL00355>

Aberdeenshire Council, Angus Council and SNH want to be involved when viewpoints are being considered and selected. This was agreed as was the requirement for "high quality" visualisations.

Aberdeenshire Council requested full consideration of cumulative impact. Specifically '*higher quality than the current ZTV*' which was a reference to the ZTVs in the Written Statement.

Dundee City Council advised that based on difficulties getting 50m blades through Dundee, it would be expected that there will be difficulties getting 57m blades through Dundee. Angus Council suggested using Montrose to bring turbines & rotors in. It was agreed that this would be looked at.

With regards to community councils it was suggested by Aberdeenshire Council, and subsequently agreed, that no consultation will take place until there is something substantive to consult upon. For example, the scoping report. Both Aberdeenshire Council and Angus Council will provide a list of community councils who should be consulted.

Re ornithology figures presented in the written statement, SNH made reference to most bird flights through the proposed location being at H2, the collision risk zone height.

SNH made reference to the Golden Eagle work being proposed in the Dorenell application as being a good example of what can be done in relation to Golden Eagle protection and preservation. They explained that this included intense monitoring being carried out and the employment of a Ranger/Inspector.

SNH and RSPB Scotland appeared to be re-assured that further ornithological surveys would be undertaken

With regards to ZTV distance SNH advised that 40km is the accepted distance. This is based on the height of proposed turbines. Full guidance can be found at:

<http://www.snh.org.uk/pdfs/publications/heritagemanagement/Visual%20representation%20of%20wind%20farms%20-%20version%202.1%20-%20December%202014.pdf>

SNH made reference to their objections to the Nathro Hill Wind Farm proposal in respect of impact on the "*highland boundary fault*".

SNH also made reference to their casework agreement with the Cairngorms National Park Authority under which they now advise on impacts arising from proposals outside the national park boundaries.

The proposed site draining into the River Dye SAC was raised and it was agreed that a Fresh Water Mussel survey is needed and will be undertaken.

Aberdeenshire Council, on being asked, agreed that a Shadow Flicker survey was not required as there were no residential properties within a distance the equivalent of ten times the proposed rotor diameter.

If I have omitted anything you want considered or I misunderstood or I am incorrect re any of the above please let me know.

Regards

Stephen

Stephen McFadden
Senior Case Officer
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Glasgow
G2 8LU

0141 278 4419

To view our current casework please visit www.energyconsents.scot

From: Matt Burnett [REDACTED]
Sent: 01 December 2015 15:00
To: McFadden S (Stephen)
Cc: Fiona Mutch
Subject: RE: Glendye Wind Farm proposal - Pre Scoping Discussion - Note

Hi Stephen,

Thank you very much for the note. We would just like to add that we advised that the LVIA is likely to require assessments of the special landscape qualities of the national park and its overlapping areas of wild land. We also noted that we were unsure that the landscape had capacity for 150m turbines and referenced our response to the application to increase turbine height to 150m at Dorenell. It is probably also worth noting that there is potential for this development to result in impacts on the natural heritage of national interest.

I hope that helps,
Kind regards
Matt

Appendix 4: List of Consultees



Statutory Consultees

Aberdeenshire Council
SEPA
SNH
Historic Environment Scotland

Non Statutory Consultees

Forestry Commission
Marine Scotland
Transport Scotland
Association of Salmon Fishery Board
BT
Civil Aviation Authority - Airspace
The Crown Estate
Defence Infrastructure Organisation
Joint Radio Company
NATS Safeguarding
RSPB Scotland
Mountaineering Council of Scotland
Scottish Water
Visit Scotland
John Muir Trust
Scottish Wildlife Trust
BAA Aerodrome Safeguarding (Aberdeen)
BAA Aerodrome Safeguarding (Edinburgh)
Highlands and Islands Airport
Nuclear Safety Directorate (HSE)
British Horse Society
Scottish Rights of Way and Access Society
(ScotWays)
Scottish Wild Land Group (SWLG)

Additional Consultees

Cairngorms National Park Authority
Feughdee West Community Council
Finzean Community Council
Mid Deeside Community Council
Mearns Community Council
Iveresk Community Council
