Stroanshalloch Wind Farm

INFINERGY

harnessing the power of nature

Updated Scoping Report

March 2018

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Applicant

Co-ordinating consultant

Contributing consultants

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INTRODUCTION

Purpose of the Updated Scoping Report

1.1. This report constitutes the request for a Revised Environmental Impact Assessment (EIA) Scoping Opinion for a proposed wind farm (the Development) on land at Stroanshalloch (the Site) approximately 6 kilometres (km) west of Moniaive, Dumfries and Galloway. The Site encompasses an area of approximately 475 hectares (ha) within an upland rural area which includes forestry plantations. The Site location is shown in Figure 1, Appendix A. This Updated Scoping Report has been prepared by Arcus Consultancy Services Ltd (Arcus) on behalf of Infinergy Ltd (the Applicant).

Project History

1.2. The original Scoping Report for the Development was prepared in April 2013. This included a layout of up to 16 turbines with a tip height of 146.5 metres (m). A Scoping Opinion was received from the Planning Authority in June 2013 (included as Appendix B). A range of initial baseline surveys were undertaken during and after the original scoping exercise as part of the EIA. These included:

- Ornithological surveys between October 2012 and August 2013;
- Ecological surveys involving an extended phase 1 habitat survey, fish and protected species surveys in 2013;
- Cultural heritage desk based assessment and supplementary site visit;
- Peat depth surveys across the Site undertaken in October 2013;
- Hydrological site visits and baseline work;
- Baseline noise surveys between July and August 2013;
- Strategic access and transport baseline studies in November 2013; and
- Aviation baseline analysis and modelling in 2013.

1.3. As part of the application process, a series of community open days were held in July 2013 allowing the community to find out more about the Development and provide comment on the proposals. Constraint analysis and layout design work also continued during 2014 to ensure that a scheme that was both environmentally sensitive and economically viable could be designed for the Site.

1.4. In 2015, assessment and design work on the project was put on hold due to the uncertainty associated with the United Kingdom (UK) Government's proposed changes to the funding arrangements for onshore wind.

1.5. In April 2017, following consideration of the economic viability of the Development in a post-subsidy environment, further ornithological

survey work commenced and is due to continue until the end of March 2018.

Progression of the Application

1.6. Now that the Applicant has confirmed the viability of the Development they can confirm their intention to make an application for planning permission to Dumfries and Galloway Local Planning Authority (LPA) under the Town and Country Planning (Scotland) Act 1997[1] as amended for the construction and operation of a wind farm on the Site. In the interests of being a responsible developer, this Updated Scoping Report has been prepared to reflect the current situation, taking account of previous surveys and consultation efforts.

1.7. The aim of the scoping process is to confirm the key environmental issues following the pause in the EIA process, to help determine which elements of the Development are likely to cause significant environmental effects and identify issues that can be scoped out of the assessment. This Updated Scoping Report has been prepared with a view to providing structure for re-consultation on the approach to EIA and the further work required for preparation of the EIA Report. Comments are therefore welcomed from consultees on the relevance of work undertaken to date, the topics to be scoped into the EIA and the proposed assessment methodologies.

1.8. This report forms the Applicant's written request to the Planning Authority, under Regulation 17 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017[2] (the EIA Regulations), for its opinion as to the information to be provided in the EIA Report (a Scoping Opinion) for the development of the Site.

The Applicant

1.9. Infinergy is a renewable energy developer with a strong focus on onshore wind development. Infinergy possesses in-house expertise along with the experience needed to design, develop, build and operate wind energy schemes.

1.10. Infinergy believes wind energy has an important role to play in reducing the combined threats of decreasing energy security, climate change and energy poverty, all of which have been identified by successive governments as key issues facing the energy supply of the UK. The Scottish Government has set a target of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources by 2030[3].

[1] Town and Country Planning (Scotland) Act 1997 (as amended). Available at: http://www.legislation.gov.uk/ukpga/1997/8/contents [Accessed 06/03/2018]
[2] The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: http://www.legislation.gov.uk/ssi/2017/102/contents/made [Accessed 06/03/2018]
[3] Scottish Government (2017). Scottish Energy Strategy: The future of energy in Scotland. Available at: http://www.gov.scot/Resource/0052/00529523.pdf [Accessed 01/03/2018]

1.11. When developing a wind energy scheme, Infinergy aims to put the right sized wind farm in the right place, whilst in close consultation with statutory consultees and local communities. This approach allows Infinergy to consistently design wind developments that are sympathetic to local landscapes, while maximising operational efficiency and hence energy output. Infinergy currently have a wind farm project portfolio of over 500 megawatts (MW).

1.12. Infinergy is a member of the trade organisations Scottish Renewables and Renewable UK. For more information please visit http://www.infinergy.co.uk.

ENVIRONMENTAL IMPACT ASSESSMENT

2.1. EIA is a legal requirement for certain types of development. In assessing the EIA requirement for wind turbine developments, the decision on whether or not an EIA is required is delegated to local authorities. Given that prior to the Development being put on hold, it was considered that it was an EIA development, it is assumed that this remains the case and a screening request has not been obtained.

EIA Process

2.2. The EIA is an iterative process of assessment and design, whereby prediction and assessment of effects will inform the eventual design of the Development. The Development can then be refined in order to avoid or reduce potential environmental effects where necessary.

2.3. The EIA Report, which reports the findings of the EIA as set out in the EIA Regulations, is required to "*describe the likely significant effects*" of a development; effects that are not considered significant do not need to be described to meet the requirements of the EIA Regulations.

2.4. The EIA Regulations implement European Union (EU) Directive 2014/52/EU[4] which amended Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment[1]. EIA is a process which identifies the potential environmental effects of a development and then seeks to avoid, reduce or offset any adverse effects through 'mitigation measures'. EIA follows a series of stages:

- Site selection and feasibility;
- Screening - is an EIA required;
- Pre-application consultation and scoping;
- Baseline studies to establish the current environmental conditions at the Site;
- Identification of potential environmental effects;
- Mitigation to avoid or reduce the effects through iterative design process;
- Assessment of residual effects;
- Preparation of an EIA Report;
- Submission of the EIA Report;
- Consideration of application and environmental information by Dumfries and Galloway Council (the Council) and other consultees;
- Determination of application (with or without conditions); and, if approved
- Implementation and monitoring.

[4] DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052&from=EN [Accessed 01/03/2018]

2.5. EIA is an iterative process of assessment and design, during which prediction and assessment of potential effects will inform the evolving design of the Development. Consultation, a vital component of the EIA process, continues throughout each stage and contributes both to the identification of potential effects and mitigation measures.

Assessment Methodology

2.6. In order to assess the potential effects arising from the Development, the significance of such effects will be determined. The determination of significance relates to the sensitivity of the resource or receptor being affected and the magnitude of change as a result of the impact. The assessment of effects will combine professional judgement together with consideration of the following.

- The sensitivity of the resource or receptor under construction;
- The magnitude of potential impact in relation to the degree of change which occurs as a result of the Development;
- The type of effect, i.e. adverse, beneficial, neutral or uncertain;
- The probability of the effect occurring, i.e. certain, likely or unlikely; and
- Whether the effect is temporary, permanent and/or reversible.

2.7. A generalised methodology for assessing significant effects is detailed below; however, each individual technical area will have a specific assessment methodology which may vary from that detailed in the following subsections.

Sensitivity of Receptors

2.8. The sensitivity of the receptors, including the importance of environmental features on or near to the Site of the sensitivity of potentially affected receptors, will be assessed in line with the best practice, legislation or statutory designations and/or judgement.

2.9.

Table 2.1 details a framework for determining the sensitivity of receptors. Each technical assessment will specify their own criteria that will be applied during the EIA and details will be provided in the relevant EIA Report chapter.

Table 2.1: Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition
Very High	The receptor has little or no ability to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.
High	The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
Low	The receptor is tolerant of change without detriment to its character, is low environmental value, or local importance.
Negligible	The receptor is resistant to change and is of little environmental value.

Magnitude of Impact

2.10. The magnitude of potential impacts will be identified through consideration of the Development, the degree of change to baseline conditions predicted as a result of the Development, the duration and reversibility of an impact and professional judgement, best practice guidance and legislation.

2.11. General criteria for assessing the magnitude of an impact are presented in Table 2.2. Each technical assessment will apply their own appropriate criteria during the EIA, with the details provided in the relevant EIA Report chapter.

Table 2.2: Framework for Determining Magnitude of Effects

Magnitude of Effects	Definition
High	A fundamental change to the baseline condition of the asset, leading to total loss or major alteration of character.
Medium	A material, partial loss or alteration of character.
Low	A slight, detectable, alteration of the baseline condition of the asset.
Negligible	A barely distinguishable change from baseline conditions.

2.12. If impacts of zero magnitude (i.e. none / no change) are identified, this will be made clear in the assessment.

Significance of Effect

2.13. The sensitivity of the asset and magnitude of the predicted impacts will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects. Table 2.3 summarises guideline criteria for assessing the significance of effects.

Table 2.3: Framework for Assessment of the Significance of Effects

Magnitude of Impact	Sensitivity of Receptor				
	Very High	**High**	**Medium**	**Low**	**Negligible**
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

2.14. Effects predicted to be of major or moderate significance are considered to be 'significant' in the context of the EIA Regulations, and are shaded in light grey in the above table.

2.15. Zero magnitude impacts upon a receptor will result in no effect, regardless of sensitivity.

Mitigation & Enhancement

2.16. Where the EIA identifies likely significant adverse effects, mitigation measures will be proposed in order to avoid, reduce, offset or compensate those effects. These mitigation measures may be embedded in the design or compensatory. Such embedded mitigation measures will likely include the movement or loss of turbines, access tracks and other infrastructure; and management and operational measures.

2.17. In line with the mitigation hierarchy identified in Planning Advice Note (PAN) 1/2013, Revision 1.0 (2017)[5], the strategy of avoidance, reduction, offsetting and compensation seeks:

- First to avoid significant adverse effects;
- Then to minimise those which remain; and
- Lastly, where no other remediation measures are possible, to propose appropriate compensation.

2.18. In addition, enhancement measures may be incorporated into design of the Development to maximise environmental benefits.

[5] The Scottish Government (2017). PAN 1/2013 Revision 1.0 Environmental Impact Assessment. Available at: http://www.gov.scot/Resource/0052/00521028.pdf [Accessed 01/03/2018]

Residual Effects

2.19. Taking a cognisance of the suggested mitigation (and enhancement) measures, the predicted effects will be re-assessed to determine the residual effects.

Cumulative Effects

2.20. At the time of writing it is known that there are other operational wind farms and a number of wind energy proposals located in the vicinity of the Site. Known wind farm developments are shown on Figure 2, Appendix A. The methodology adopted for assessing the cumulative effects of wind energy developments will be in accordance with advice from SNH[6,7]. Cumulative effects will be considered for each technical area assessed within the EIA and include two forms:

- Combined effects of two or more similar developments; and
- Combined effects within the Development.

2.21. The cumulative assessment will include descriptions of the effects in relation to proposed and upgraded transmission lines in the vicinity of the Development.

2.22. The extent of the cumulative assessment relative to each technical assessment will be agreed during the consultation process. For example, the potential landscape and visual effects, which relate to the visibility of the Development, will be much more wide ranging than noise effects, which will be limited to receptors in the more immediate vicinity of the Development. Specific guidance and policy exist for certain technical areas which advise how effects should be considered cumulatively and these will be used where relevant.

Alternatives

2.23. Schedule 4, Part 2 of the EIA Regulations 2017 requires a description of the reasonable alternatives (such as project design, technology, location, size and scale) studied by the developer, which are relevant to the Development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of environmental effects. Consideration of alternative designs has already begun. The final layout of the Development will be based on a range of technical criteria, such as separation distances between turbines, wind speed, prevailing wind direction, existing infrastructure, topography, ground conditions, local environmental issues and landscape and visual considerations. The identification of these criteria is an iterative process: as they are identified the layout of the Development, including ancillary infrastructure, will undergo a series of modifications to avoid or reduce

[6] SNH, 2005, *Cumulative effect of Windfarms (Version 2)* [Online] Available at: http://www.snh.org.uk/pdfs/strategy/cumulativeeffectsonwindfarms.pdf [Accessed 02/02/2018]
[7] SNH, 2012, *Assessing the Cumulative Impact of Onshore Renewable Energy Developments* Available at: http://www.snh.gov.uk/docs/A675503.pdf [Accessed 02/02/2018]

potential effects through careful design. This process will be set out in the EIA Report.

Structure and Content of the EIA Report

2.24. The content of the EIA Report will broadly follow the specifications detailed within Schedule 4 of the EIA Regulations. The EIA Report will consist of three volumes and a Non-Technical Summary (NTS).

- Volume 1 – Main EIA Report text;
- Volume 2 – Figures; and
- Volume 3 – Technical Appendices.

2.25. The front end of the main EIA Report text will include:

- An introduction;
- Description of the site and its surroundings;
- Details of alternative considered and scheme evolution;
- Description of the Development;
- Details of the EIA process and methodology, including a summary of consultation; and
- Policy context.

2.26. The technical chapters of the EIA Report will present details of the assessments undertaken, including any cumulative effects, required mitigation and residual effects.

PROJECT DESCRIPTION

3.1. The Development will consist of:

- Wind turbines and turbine foundations;
- Access tracks and crane pads;
- On site power collection system (transformers and underground cables);
- Substation compound including a battery energy storage array;
- Construction compound;
- Borrow Pit workings; and
- Permanent meteorological mast.

Turbines

3.2. The proposed details are as follows:

- Number of turbines – up to 11;
- Maximum height to blade tip – 149.5 m;
- Maximum generating capacity (per turbine) – 3 - 4 MW; and
- Total generation capacity – up to 44 MW.

3.3. An indicative turbine layout is shown in Figure 3, Appendix A. This layout has been developed with due consideration to known constraints *e.g.*, topography, watercourses, cultural heritage features, peat depth, and proximity to dwellings.

3.4. For the purposes of the EIA, a precautionary approach will be taken and the largest prospective turbine will be assessed as the selected option. The worst case scenario will be evaluated for each topic, for example the maximum tip height and rotor diameter for landscape and visual and the maximum rotor diameter and a lower feasible hub height for ornithology.

Access Tracks

3.5. The turbine components would be delivered to the Site using the existing road network. The use of public roads will require further consultation with the appropriate bodies.

3.6. Previous site visits and route modelling and inspection suggests that turbine components could be delivered to site from the Port of Ayr via the A77, A713 and then via the western end of the B729. However, a detailed further abnormal loads assessment will be undertaken to determine the most suitable route of turbine delivery to the site. The traffic assessment would determine any requirements for upgrading of junctions or minor roads and would include swept path analysis.

3.7. Existing forestry access tracks on Site will be used as far as possible to provide access to the turbines, construction compound, substation and

meteorological mast. Where required, tracks will be upgraded and new tracks will be constructed of a graded stone and be up to 6 m in width.

3.8. An access and traffic assessment will be conducted as outlined in Chapter 14 of this scoping report.

Construction of the Development

3.9. The construction phase of the Development will comprise on-site site preparation and construction activities, supported by deliveries of materials, components and staff to the Site.

3.10. Construction is expected to take approximately 12 to 18 months, depending on weather and ground conditions, as well as other technical and environmental factors and is likely to consist of the following principal operations:

- Forestry activities;
- Extraction of stone from onsite borrow pits;
- Construction and upgrading of site tracks including water crossings/culverts;
- Construction of a temporary construction compound and office facilities;
- Construction of the substation buildings/compounds;
- Construction of turbine foundations;
- Construction of crane hardstanding areas;
- Excavation of cable trenches and cable laying adjacent to the site tracks;
- Installation of temporary and permanent drainage;
- Erection and commissioning of wind turbines; and
- Reinstatement of borrow pits and temporary construction compounds.

Grid Connection

3.11. Underground cabling, laid where possible alongside the access tracks, will link the turbine transformers to a single storey control building. Each turbine transformer will be located either within the turbine nacelle, within the base of the tower or in a small enclosure at the base of the turbine.

3.12. The connection to the grid falls under a separate consent process and will be subject to a separate application. As such it will not be considered as part of this EIA. However, a high level desk based environmental review of the likely connection route will be included as an appendix to the EIA Report.

Decommissioning

3.13. The Development will be designed to operate for a period of 25 years. Provision will be made for the Development to be decommissioned and the site restored at the expiry of consent. Typically all above ground infrastructure will be dismantled and removed from the site, cables and turbine foundations will be cut 1 m below ground level and covered with topsoil. Alternatively, the Applicant may apply for consent to extend the operational life of the Development in accordance with the relevant legislation at the time of any such application.

SITE SELECTION AND DESIGN EVOLUTION

4.1. The Applicant has identified the Site through an iterative site selection process seeking to avoid areas of high environmental sensitivity whilst choosing sites which are technically and economically viable. In doing so the following criteria have been used:

- No international or national landscape designations within the Site;
- No European Protected Species listed on Annex 1 of European Council Directive 2009/147/EC[8] on the conservation of wild birds or species listed in Schedule 1 to the Wildlife and Countryside Act 1981[9], as amended, located within the turbine envelope area;
- An assessment of known ecological/ ornithological constraints within the vicinity of the Site;
- Located more than 2 km from densely populated settlements;
- Exposed location with good wind speeds;
- Close proximity to a potential grid connection point;
- Land area available to accommodate sufficient and viable generating capacity;
- Availability of good access route options to the site involving minimal environmental disruption; and
- No, or potentially resolvable, civil and military radar issues.

4.2. The purpose of a wind farm is to harness energy from the wind. It is important that wind turbines are sited in the optimum position to maximise the wind yield whilst minimising environmental effects.

4.3. The optimum layout of a wind farm depends on a range of criteria. These vary depending on the type and size of turbine as well as the local topography and the turbulence created by the ground conditions within and around the Site. Turbine manufacturers recommend that the turbines be spaced between four and five rotor diameters apart depending on the prevailing wind direction, turbine type and site characteristics. The available capacity of the electricity grid into which a wind farm will connect can also limit its size.

4.4. Throughout the remainder of the EIA process, the layout will further evolve to take into consideration the results of additional surveys and data gathered through the assessment process. This iterative design process ensures that the final layout of the wind farm submitted responds to the constraints identified onsite. The iterative design process and the reasoning behind the key changes will be reported in the EIA Report.

[8] DIRECTIVE 2009/147/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 November 2009. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN [Accessed 01/03/2018]
[9] The Wildlife and Countryside Act 1981. Available at: https://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf [Accessed 01/03/2018]

PLANNING AND ENERGY POLICY

5.1. The Planning and Energy Policy Chapter of the EIA Report will consider the Development in the context of adopted and emerging planning and energy related documents. The EIA Report Chapter will not undertake a detailed assessment of the Development against relevant planning polices and other material considerations, rather it will identify those documents considered to be material to determination of the application, identifying and briefly discussing individual plans, policies, aims and objectives considered to be particularly pertinent to the Development.

5.2. The application will be accompanied by a Planning Statement in support of the Development. The Planning Statement will draw upon the contents of the Planning and Energy Policy Chapter and consider the Development against identified planning and other policy objectives, concluding with substantiated comments about the extent to which the Development complies with the aims and objectives of identified plans and policies.

5.3. For clarity, the Planning Statement will draw upon the residual effects, post mitigation, of the Development identified in the various technical chapters of the EIA Report, in discussing the extent to which it complies with the aims and objectives of identified planning, energy and other relevant policy objectives. The purpose of this Chapter of the Scoping Report is to establish agreement on the planning and energy related documents that should be considered by the Applicant in the EIA.

National Planning Policy

National Planning Framework 3[10]

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

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

[10] National Planning Framework 3 (2014). Available at: http://www.gov.scot/Resource/0045/00453683.pdf [Accessed 01/03/2018]

Scottish Planning Policy[11]

5.6. The most up to date version of Scottish Planning Policy (SPP) was introduced by the Scottish Government in June 2014 alongside NPF3. SPP states that its purpose "*is to set out national planning polices which reflect Scottish Ministers' priorities for operation of the planning system and for the development and use of land*". As a statement of Scottish Ministers' priorities, the content of SPP is a material consideration that carries significant weight in the assessment of planning applications, although SPP makes it clear that it is for the decision maker to determine the appropriate weight in each case.

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

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

5.8. The narrative and policies under the 'Low Carbon Place' heading are likely to be of most relevance to the Development, as this section contains commentary relating to renewable energy matters in general and in relation to onshore wind in particular. Table 1 of SPP 'Spatial Frameworks' shows areas where wind farms will not be acceptable (Group 1), areas of significant protection (Group 2) and areas with potential for wind farm development (Group 3). As far as it is possible to tell from the scale of the Wind Energy Interim Spatial Framework Maps (2014) on the Council's website, the Site is located partly within a Group 3 area.

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

Onshore Wind Turbines, Online Renewables Planning Advice (May 2014)[12]

5.10. The Scottish Government introduced online renewables advice in February 2011, which has been regularly updated since then. The most recent specific advice note regarding onshore wind turbines was published in May 2014. The advice note identifies the typical planning considerations in determining applications for onshore wind turbines, including landscape impact, impacts on wildlife and ecology, shadow

[11] Scottish Planning Policy (2014). Available at: http://www.gov.scot/Resource/0045/00453827.pdf [Accessed 01/03/2018]
[12] Scottish Government (2014). Onshore Wind Turbines, Online Renewables Planning Advice. Available at: http://www.gov.scot/Resource/0045/00451413.pdf [Accessed 01/03/2017]

flicker, noise, ice throw, aviation, road traffic impacts, cumulative impacts and decommissioning.

5.11. The Planning and Energy Policy Chapter will consider the most up to date version of the advice note in place at the time of preparation.

Planning Advice Notes[13]

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

- PAN 1/2011: Planning and Noise (2011);
- PAN 1/2013: Environmental Impact Assessment, Revision 1.0 (2017);
- PAN 2/2011: Planning and Archaeology (2011);
- PAN 3/2010: Planning Advice on Community Engagement (2010);
- PAN 51: Planning, Environmental Protection and Regulation (2006);
- PAN 60: Planning for Natural Heritage (2000);
- PAN 61: Planning and Sustainable Urban Drainage Systems (2001);
- PAN 68: Design Statements (2003);
- PAN 69: Planning and Building Standards Advice on Flooding (2004);
- PAN 75: Planning for Transport (2005); and
- PAN 79: Water and Drainage (2006).

Historic Environment Scotland Policy Statement (June 2016)[14]

5.13. The Historic Environment Scotland (HES) Policy Statement sets out Scottish Ministers' policies for the historic environment, provides greater policy direction for HES and provides a policy framework to inform the work of organisations that have a role and interest in managing the historic environment. This statement complements and has the same authority as the SPP. In paragraph 1.6 of the introductory section it notes that the historic environment faces many challenges, including the needs of renewable energy generation.

5.14. The Planning and Energy Policy Chapter will consider the Development against this statement, notably the 'key principles' which include conservation and management for the benefit of present and future generations and an understanding that the people of Scotland should be

[13] Scottish Government (various). Planning Advice Notes. Available at: https://beta.gov.scot/publications/planning-advice-notes-index/ [Accessed 01/03/2017]
[14] HES (2016). Historic Environment Scotland Policy Statement. Available at: https://pub-prod-sdk.azurewebsites.net/api/file/d60d93c4-90ad-41af-ba52-a67a00c7b383 [Accessed 01/03/2017]

able to enjoy, appreciate, learn from and understand Scotland's historic environment.

Strategic and Local Planning Policy

Dumfries and Galloway Local Development Plan[15]

5.15. The Development Plan for Dumfries and Galloway comprises the Dumfries and Galloway Local Development Plan (LDP) which was adopted in September 2014 and is the established planning policy for the area.

5.16. A review of the LDP is currently underway, the most recent stage being the approval by members at a Full Council meeting on 18 January 2018 to publish a Proposed LDP2[16] for consultation. It is therefore expected that the currently adopted LDP will provide the established planning policy throughout the anticipated EIA Report preparation stage and determination period for the Development. Progress of the Proposed LDP2 will be monitored throughout the EIA and it is proposed that the Planning and Energy Policy Chapter will contain a section that discusses the Proposed LDP2, noting its status at the time of the EIA Report publication.

5.17. The LDP will be a significant material consideration in decision making process for Dumfries and Galloway Council and the Planning and Energy Policy Chapter will identify those aims, objectives and planning policies of the LDP considered to be of relevance to the Development. Policies IN1 Renewable Energy and IN2 Wind Energy are the key LDP policies, however other LDP policies of relevance will also be discussed as appropriate in the context of the EIA.

Dumfries and Galloway Supplementary Planning Guidance

5.18. The Council adopted their Supplementary Guidance (SG) relating to onshore wind development in June 2017. The SG comprises two parts; Wind Energy Development: Development Management Considerations[17] and Dumfries and Galloway Wind Farm Land Capacity Study[18]. As adopted SG, this forms part of the LDP and is afforded the same weight as the LDP for decision making purposes.

[15] Dumfries and Galloway Council (2014). Local Development Plan. Available at: https://www.dumgal.gov.uk/media/17412/Local-Development-Plan-Section-1/pdf/Section1_LDP_(policy).pdf [Accessed 01/03/2018]
[16] Dumfries and Galloway Council (2018). Local Development Plan 2, Proposed Plan. Available at: https://www.dumgal.gov.uk/media/19739/LDP2-Proposed-Plan/pdf/PROPOSED_PLAN_JAN_2018.pdf [Accessed 01/03/2018]
[17] Dumfries and Galloway Council (2017). Wind Energy Development: Development Management Considerations. Available at: https://www.dumgal.gov.uk/media/17607/Part-1-Wind-Energy-Development-Development-Management-Considerations-Screening-Determination/pdf/0892-16_Wind_Energy_Guidance_Part_1.pdf [Accessed 01/03/2018]
[18] Dumfries and Galloway Council (2017) Dumfries and Galloway Wind Farm Land Capacity Study. Available at: https://www.dumgal.gov.uk/media/18596/Dumfries-and-Galloway-Wind-Farm-Land-Capacity-Study-Appendix-C/pdf/Wind_Energy_Appendix_C_Landscape_June_2017.pdf [Accessed 01/03/2018]

5.19. As part of the production of the Proposed LDP2, the SG is also being reviewed. The Draft SG documents are also subject to consultation, following approval of such by members at the Full Council meeting in January 2018. Progress of the Draft SG will be monitored throughout the EIA Report preparation process and it is proposed that the Planning and Energy Policy Chapter will contain a section that discusses the Draft SG, noting its status at the time of EIA Report publication.

Energy Policy

5.20. According to the United Nations Intergovernmental Panel on Climate Change's fifth assessment report[19], fossil fuel power generation should be phased out almost entirely by the end of the century to limit global warming to 2 degrees Celsius (°C) above pre-industrial levels. The report states that low carbon electricity supply will have to increase from 30% currently to more than 80% by 2050.

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

- 2009 Copenhagen Accord[20] - As a party to the Copenhagen Accord, the UK has agreed a range of proclamations and objectives, including that climate change is 'one of the greatest challenges of our time', which must be combated 'urgently'.
- 2009 European Renewable Energy Directive[21] - The Directive encourages energy efficiency, energy consumption from renewable sources and the improvement of energy supply.
- The Climate Change (Scotland) Act 2009[22] - Sets out the statutory framework for GHG emission reductions in Scotland. The Scottish Government is in the process of finalising its third Climate Change Plan, setting out proposals to drive emissions down by 66% by 2032.

[19] IPCC (2014) Fifth Assessment Report. Available at: http://www.ipcc.ch/report/ar5/index.shtml [Accessed 01/03/2018]
[20] UN (2009). Copenhagen Accord. Available at: http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf [Accessed 01/03/2017]
[21] DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN [Accessed 01/03/2018]
[22] Climate Change (Scotland) Act 2009. Available at: https://www.legislation.gov.uk/asp/2009/12/pdfs/asp_20090012_en.pdf [Accessed 01/03/2018]

- Renewables Action Plan (2009)[23] including associated updates – The overall aim is to support and accelerate the implementation of renewable energy in line with EU targets.
- Onshore Wind Policy Statement (December 2017)[24] - This newly published statement by the Scottish Government examines a number of issues relating to the maintenance and continued support of onshore wind as a more mature technology for renewable energy generation. The statement covers a range of topics including route to market, strategic approach to development, protection for residents and the environment and community benefits.
- Scottish Energy Strategy: The future of energy in Scotland (December 2017)[3] - This strategy document aims to guide Scottish Government decisions and priorities in the context of a 'whole system' approach to energy production and consumption. Two new 2030 targets are set by the strategy. Firstly, that the equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources. Secondly, an increase in 30% in the productivity of energy use across the Scottish economy.
- Electricity Generation Policy Statement, 2013[25] - This Scottish Government publication examines the way in which Scotland generates electricity and is underpinned by four key principles, one of which includes a largely decarbonised electricity generation sector by 2030.

5.22. These documents comprise the main energy related publications that will be considered in the Planning and Energy Policy Chapter, with any other publications and/or updates to these documents considered on a case by case basis.

[23] Scottish Government (2009). Renewables Action Plan. Available at: http://www.gov.scot/Resource/Doc/278424/0083663.pdf [Accessed 01/03/2018]
[24] Scottish Government (2017). Onshore Wind Policy Statement. Available at: http://www.gov.scot/Resource/0052/00529536.pdf [Accessed 01/03/2018]
[25] Scottish Government (2013). Electricity Generation Policy Statement. Available at: http://www.gov.scot/Resource/0042/00427293.pdf [Accessed 01/03/2018]

FORESTRY

6.1. This Chapter of the Scoping Report sets out the approach which would be used to integrate the Development into the existing woodland structure. A Wind Farm Forest Plan would be prepared, which would detail felling and replanting proposals, illustrating the forestry requirements associated with the construction and operation of the Development.

6.2. The Site is located in an area with extensive commercial woodlands, both private and publicly owned. The land available for the Development is largely forested, with the remainder comprising open ground for management boundaries, roads, unplantable land and margins beyond the woodland edge. The forests within the Site are privately owned and managed. They consist primarily of commercial conifers with areas of native broadleaves, open ground habitats and water bodies.

6.3. A desk based assessment reveals there are no woodland designations affecting the Site. Areas are identified as Primary and Secondary Zones under the Native Woodland Integrated Habitat Network, as potential areas for native woodland expansion. There are small areas of Core Native Woodland as part of the Native Woodland - Integrated Habitat Network located within the Site, but the majority of these have been recently planted as part of the Long Term Forest Plan. The commercial conifer crops are now moving into the second rotation, with ongoing felling and replanting of mature woodlands.

6.4. Timber from the Site will be dispatched via the B729. The B729 is a consultation route for timber traffic and is subject to an agreed usage protocol with the Council and forestry users. Development related timber traffic would need to be integrated into all other timber traffic using this route, in agreement with the forestry industry and the Council.

2013 Scoping Opinion

6.5. In 2013, the responses in relation to forestry were received from the Scottish Environment Protection Agency (SEPA) and the Forestry Commission Scotland (FCS). FCS were satisfied that the Scoping Report identified the various aspects which would need to be covered within the EIA and noted that a meeting would be beneficial once the initial layout had been drafted. SEPA noted that the Applicant should consider waste from forestry and how this could be managed. The use of waste materials on site for ecological benefits, must be proven to be beneficial onsite and result in no harm, otherwise it would be classed as a waste under the waste regulations. The release of nutrients during felling processes is also a key consideration in terms of water quality. SEPA also welcomed the approach of key holing the turbines and noted that clear felling would be acceptable on areas of deep peat enabling their restoration as guided by a Habitat Management Plan (HMP).

Assessment Methodology

Guidance and Legislation

6.6. In the UK there is a strong presumption against permanent woodland removal, unless it addresses other environmental concerns or where it would achieve significant and clearly defined additional public benefits. In Scotland, such woodland removal is dealt with under the Scottish Government's Control of Woodland Removal Policy[26] (2009). The purpose of the policy is to provide direction for decisions on woodland removal in Scotland. It is essential that the requirements of the Policy are addressed within the EIA. The integration of the Development into the Forest Plan will be a key part of the development process.

6.7. The forestry proposals would be prepared in accordance with the current industry best practice and guidance including, but not limited to:

- Dumfries and Galloway Council (2014): The Dumfries and Galloway Forestry and Woodland Strategy. Dumfries.
- Forestry Commission (2017). The UK Forestry Standard: The Government's Approach to Sustainable Forestry, Forestry Commission. Edinburgh.
- Forestry Commission Scotland (2009). The Scottish Government's Policy on Control of Woodland Removal. Edinburgh.
- Forestry Commission Scotland (2015): Guidance to Forestry Commission Scotland staff on implementing the Scottish Government's Policy on Control of Woodland Removal.
- The Scottish Government (2006). The Scottish Forestry Strategy. Edinburgh.
- The Scottish Government (2011). Scottish Land Use Strategy. Edinburgh.
- The Scottish Government (2012): Waste (Scotland) Regulations 2012.
- The Scottish Government (2014a). Scotland's Third National Planning Framework (NPF3). Edinburgh.
- The Scottish Government (2014b). Scottish Planning Policy. Edinburgh
- SEPA (2013): SEPA Guidance Notes WST-G-027 Management of Forestry Waste.
- SEPA (2014): LUPS-GU27 Use of Trees Cleared to Facilitate Development of Afforested Land.
- UKWAS (2018). The UK Woodland Assurance Standard 4th Edition, UKWAS, Edinburgh.

[26] FCS (2009). Control of Woodland Removal Policy. Available at: Control of Woodland Removal Policy [Accessed 01/03/2018]

Consultation

6.8. The main forestry consultee is FCS, South Scotland Conservancy. FCS would be consulted throughout the design of the Development to ensure that the proposed changes to the woodlands are appropriate and address the requirements of the Control of Woodland Removal Policy and other guidance. In addition there may be interrelated issues raised by other consultees which would be addressed within the forestry assessment, for example from SEPA on forestry residues and the Council on timber transport.

Assessment

6.9. Forestry does not fit well into the standard EIA methodology. Commercial forests are dynamic and constantly changing through landowner activities, market forces and natural events such as windblow or pest and diseases. The forestry assessment would therefore not be a formal EIA assessment, rather it would be an assessment which describes the changes to the forest structure resulting from the incorporation of the Development into the forest. This would include the changes to, for example, the woodland composition and felling programmes. The forestry assessment would be presented in an individual EIA Report Chapter. The effects of the Development relating to forest felling and restocking would be assessed in the relevant chapters of the EIA Report, including Ecology; Landscape and Visual; Hydrology, Hydrogeology, Geology and Peat; Ornithology; and Traffic and Transport.

Baseline Conditions

6.10. The forestry baseline will describe the crops existing at the time of preparation of the EIA Report. This would include current species; planting year; felling and restocking plans contained within the existing Forest Plan; and other relevant woodland information. It would be prepared from existing forest records; desk based assessments; site visits; and aerial photographs.

Potential Effects and Assessment

6.11. There is potential for changes to the forest structure resulting from the Development, with consequential implications for the wider felling and restocking plans across the forest area. Areas of woodland may need to be felled for the construction and operation of the Development including for access tracks, turbine locations and other infrastructure. The potential effects would be changes to the structure of the woodlands, which may result in a loss of woodland area. This would be addressed through a redesign of the existing forest including, for example, the use of designed open space; alternative woodland types; changing the management intensity; or the provision of compensation planting on an alternative site. The changes to the forests for a particular development are regarded as site specific and it is considered that there are no cumulative forestry issues to be addressed.

6.12. The principal output would be the preparation of the Wind Farm Forest Plan. This would include a felling plan to show which woodlands are to be felled and when they are to be felled during the life of the Development. It would further include a restocking plan showing which woodlands are to be replanted and when during the life of the Development. The changes to the woodland structure would be analysed and described including changes to species composition, age class structure, timber production, traffic movements and the felling and restocking plans.

6.13. The resulting changes to the woodland structure and any requirement for compensation planting to mitigate against any woodland loss would be considered in the context of the Control of Woodland Removal Policy and in consultation with FCS.

Key Questions for Consultees

6.14. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the proposed methodology and scope of the forestry assessment?
- Do the consultees have any information, particularly with reference to any new guidance, which should be taken into account within the assessment?

LANDSCAPE AND VISUAL

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

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

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

7.4. It is proposed that the LVIA will consider the potential effects of the Development upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

2013 Scoping Opinion

7.5. In the 2013 Scoping Opinion, SNH made a number of points:

- The Applicant should consider a number of layout and turbine height iterations during the EIA process to ensure that the Development is well designed to work with the landscape.
- Given the proximity of the scheme to the Thornhill Uplands Regional Scenic Area a full assessment of effects on this designation must be undertaken. It was noted that the capacity for wind development in the Foothills with Forestry 'Stroan' Unit is likely to be constrained by cumulative effects.
- The apparent saturation of the area with wind energy developments was a key consideration.
- Cumulative wireframes for most viewpoints were thought likely to be necessary.
- The suggested viewpoints were acceptable, with five additional locations offered for inclusion in the assessment.

7.6. The Landscape Architect on behalf of the Council suggested a number of viewpoints which were integrated with other schemes in the area.

7.7. These points have all been considered during the initial survey and assessment work and in compiling this Updated Scoping Report.

Baseline Landscape Conditions

Landscape Character

7.8. The Dumfries and Galloway landscape assessment was undertaken by Land Use Consultants in 1998[27] and formed part of the national programme of landscape character assessment (LCA) commissioned by Scottish Natural Heritage (SNH) in partnership with local authorities.

7.9. The study defines 27 landscape character types across Dumfries and Galloway. Each character type is further sub-divided into landscape units which comprise discrete geographical areas. A total of 104 of these smaller landscape units occur across Dumfries and Galloway.

7.10. The Site falls across three landscape character types. However, all of the proposed turbines are located within the 18a Foothills with Forest landscape character type.

7.11. The key characteristics of the Foothills with Forest were identified in the landscape assessment as '*dark green blanket of forest covering undulating foothills, various stages of forest rotation evident in the landscape – young plantation, clearfell and deep ploughing, tall mature conifers at roadside,* and *semi improved pasture with walled enclosure on open ground'.* The potential for the landscape to accommodate wind energy development is described as follows; '*Forested foothills may provide opportunities for topographic screening and backclothing with the added benefits of peripheral tree screens and the provision of forest access roads. The most suitable locations would be in the middle area of these landscapes below ridge lines, in depressions, basins or valleys where their influence on Scottish Uplands and Upland Fringe (and Lowland) landscapes would be minimised. The medium scale of topography would suggest an appropriate size of wind farm to be up to 10 turbines'*.

7.12. The Dumfries and Galloway Wind Farm Landscape Capacity Study[18] (DGWLCS) forms Appendix C to the Wind Energy Development: Development Management Considerations[17] Supplementary Guidance Document. The study assesses the sensitivity of landscape character types, and more locally defined character areas, to different sizes of wind turbine development. The study was revised and updated to reflect the current position in relation to wind farm development in Dumfries and Galloway and the emergence of larger turbines.

7.13. The study considers landscape sensitivity to a wide range of turbines, based primarily on turbine height. It focusses on the remaining capacity for large turbines and a consideration of potential cumulative effects.

7.14. With regard to the sensitivity of the Foothills with Forest landscape the Capacity Study states that this would be '**High-Medium'** for large scale typology turbines.

[27] Land Use Consultants (1998). Dumfries and Galloway Landscape Assessment. Available at: http://www.snh.org.uk/pdfs/publications/review/094.pdf [Accessed 01/03/2018]

7.15. It is set out in the Executive Summary to the Capacity Study that in terms of landscape capacity of wind energy development it identifies 'some more limited remaining opportunities likely in the Plateau Moorlands, Plateau Moorlands with Forest and Foothills with Forest landscape character types'.

7.16. In relation to the landscape capacity of the 'Stroan' area of the character type, the Capacity Study states that 'There are some very limited opportunities for the Large typology (turbines 80-150m) to be sited on broader less prominent hills and ridges set well back from the edge of more settled landscapes such as the Drumlin Pastures (13), Flooded Valley (8) and Upland Glens (10) landscape types. The northern part of this landscape unit is generally less visible from roads and settlements, although there are recreational receptors, such as the SUW, Lochinvar, and minor roads plus the Galloway Forest Park. Additional turbines should be limited in number with scope greatest for one or two small clustered groupings or very small extensions to consented developments in order to avoid a dominant effect on adjacent smaller scale settled landscapes'.

Landscape Designations

7.17. The Site lies outwith any national landscape designation, including, National Parks or National Scenic Areas. It also lies outwith Wild Land, Inventoried Gardens and Designed Landscapes and the Galloway Forest Park (including the Dark Skies Park). It is recognised that the Thornhill Uplands RSA is located to the north east of the Development. A full assessment of potential effects will be undertaken upon this locally designated landscape. Landscape designations in the wider area are illustrated on Figure 4, Appendix A.

Visual Receptors

7.18. There are a relatively limited number of potential visual receptors in the area surrounding the Site, with few settlements and towns in the nearby locality. There would be the potential for some views from the local road network, including the B729, and also the Southern Upland Way as it passes to the north west of the site. A detailed consideration of the potential for impacts to the visual amenity of receptors in the landscape surrounding the Site will be set out in the LVIA. This visual assessment will be informed by a selection of representative assessment viewpoints, which are discussed further in the methodology section, each of which will be illustrated with visualisations prepared in line with SNH best practice guidance.

Residential Visual Amenity

7.19. Detailed consideration with regard to residential visual amenity will also be given within in the LVIA. The Residential Visual Amenity Study (RVAS) will consider views from all properties located within 2 km of the Development.

Methodology

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

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

Published LVIA Guidance

7.21. The LVIA shall be undertaken in accordance with the principles of best practice, as outlined in published guidance documents, notably the third edition of the Guidelines for Landscape and Visual Assessment[28] (GLVIA3)

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

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

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

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

[28] LI & IEMA (2013). Guidelines for Landscape and Visual Impact Assessment, Third Edition.

- Guidelines for Landscape Character Assessment, (2002) Countryside Agency and SNH;
- Landscape Character Assessment Guidance for England and Scotland: Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity, (2002) The Countryside Agency and SNH;
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (March 2012) SNH;
- Siting and Design of Wind farms in the Landscape, Version 3 (February 2017) SNH;
- Visual Representation of Wind farms – Version 2.2 (February 2017), SNH;
- Landscape Institute (LI) Advice Note 02/17 Visual representation of development proposals (March 2017) Landscape Institute; and
- LI Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment, (2011) Landscape Institute.

7.25. Full details of the methodology will be provided within the LVIA chapter. The following provides an outline of the key aspects of the assessment.

Distinction between Landscape and Visual Effects

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

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

Types of Landscape and Visual Effects Considered

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

7.28. The LVIA will not only assess the effects associated with the turbines, but also any related effects resulting from the anemometer mast, control building/substation, underground cabling, borrow pit workings and site tracks and access road.

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

7.30. The LVIA will also consider the potential for any cumulative effects to arise. The requirement for consideration of cumulative effects under the EIA Regulations is set out in Schedule 4, as follows:

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

7.31. This represents a change to the wording of the previous Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 which stated: "*A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development*".

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

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

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

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

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

Study Areas

7.36. In order to assist with defining the study area, a digital Zone of Theoretical Visibility (ZTV) model was created as a starting point to illustrate the geographical area within which views of development on the

Site are theoretically possible. This was based on a 'bare-earth' scenario, whereby the screening effect of areas of existing vegetation or built features in the landscape are not taken into account. The ZTV was modelled to blade tip height using the currently proposed turbine height of 149.5 m and is presented at Figure 5, Appendix A.

7.37. The ZTV is a useful tool used to provide a focus on the area and receptors that are most likely to be affected by a proposed development, but should always be subject to verification in the field. In this regard, initial site visits have been conducted during January 2018 to understand the actual likely visibility of development at the Site.

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

7.39. For the cumulative assessment, consideration was initially given to a 60 km radius from the Site, as recommended by SNH best practice guidance. Following this review, it is proposed that a 20 km study area be adopted to consider cumulative effects, which is considered to represent a proportionate extent of the study area and the limit within which any potential significant cumulative effects might occur. Cumulative sites within 35 km of the site are illustrated on Figure 2, Appendix A and listed in Appendix C.

7.40. It is also proposed to carry out a separate Residential Visual Amenity Study covering all properties located within 2 km of all proposed turbines. This additional assessment will be presented in an appendix to the LVIA Chapter and will complement the assessment of visual receptors within the LVIA, providing further detail in relation to the effect on the views and amenity from different parts of each property and its curtilage.

Proposed LVIA Viewpoint Locations

7.41. It is proposed that the 21 locations set out in Table 7.1 are included as viewpoints in the LVIA. The locations which are illustrated on Figure 5, Appendix A represent visual receptors and character types at a range of distances and directions from the Site.

7.42. It is acknowledged that a previous list of viewpoint locations have been consulted with both the LPA and SNH, and a number of these viewpoints have been incorporated into the list below.

7.43. However, it is also acknowledged that the Development is located in relative close proximity to the proposed Longburn Wind Farm. This scheme of 10 no. turbines, 134 m to blade tip, is located on land to the west of the Site and is understood to be visible from similar locations to the Development. A planning application for Longburn Wind Farm was submitted to Dumfries and Galloway Council in June 2016 (application reference 16/P/2/0187), and a series of viewpoints were agreed with

SNH and the Council. The application was refused consent in September 2017 and is currently subject to an appeal (reference PPA-170-2129) which was lodged in October 2017. At the time of preparing this Scoping Report it remains undetermined.

7.44. A comparative exercise of ZTV coverage between the Development and the proposed Longburn Wind Farm has been undertaken to understand the potential cumulative effects of the two schemes. This in turn has influenced the choice of viewpoint locations, which have been purposefully chosen to replicate a number of those that were included in the Longburn LVIA to allow for a comprehensive understanding of potential effects.

7.45. It should be noted however, that there are differences in ZTV coverage between the Development and the Longburn Wind Farm, and therefore further viewpoints have also been selected to best represent the landscape included within ZTV coverage of the Development.

Table 7.1: Proposed Assessment Viewpoints

No	Location	OS Grid Ref	Direction	Receptor Type
1	B729, Craigdarroch	272785, 591055	East	Minor Road
2	Guttery Glen (B729)	265951, 591540	North north west	Minor Road
3	Smittons Bridge	263301, 591879	West north west	Minor Road
4	Big Morton Hill	273110, 589655	East	Hill summit
5	Carroch Hill	267389, 592210	North East	Hill summit
6	Culmark Hill	264448, 589670	South	Southern Upland Way
7	Auchenstroan Craig	269414, 591375	North	Local hill top
8	Southern Upland Way west of Benbrack	267950, 597005	North	Long distance footpath. Limited view from summit of Benbrack
9	A713 Dundeugh	259835, 588020	South west	Major route at edge of Galloway Forest Park
10	Dundeugh Hill	260976, 589724	South West	Hill summit
11	A702, near Castlefairn	272760, 586780	South east	Major route
12	Cairnsmore of Carsphairn	259472, 597985	North west	Hill summit

No	Location	OS Grid Ref	Direction	Receptor Type
13	Turner's Monument	282183, 576962	East	Monument
14	Alhang	264229, 601026	North	Hill summit
15	Mullwhanny	271668, 597343	North east	Hill summit near to Cairnhead and Striding Arch Sculptures
16	Bardennoch Hill	256679, 591479	West	Hill summit
17	Maxwelton House	282164, 589925	East	Designed Landscape
18	Corserine	250365, 587143	West South West	Hill summit
19	Moniaive	278381, 590678	East	Public Open Space within settlement
20	Junction of minor roads south of Castlefairn	274970, 585700	South east	Minor Road
21	Minor road to south west, north of Lochwhinnie Hill	266760, 589585	South west	Minor Road

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

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

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

Visualisations

7.49. For each of the viewpoints, photography will be undertaken and visualisations will be prepared in line with SNH best practice guidance[29].

7.50. A digital model will be generated to enable the production of wirelines of the Development from locations throughout the study area to help

[29] SNH (2017). Visual Representation of Wind Farms, Version 2.2. Available at: https://www.nature.scot/sites/default/files/2017-07/A2203860%20-%20Visual%20representation%20of%20wind%20farms%20-%20Guidance%20-%20Feb%202017.pdf [Accessed 01/03/2018]

identify the scale, arrangement and visibility of the proposed turbines. These images will be reviewed on site to assess how natural and built screening would affect visibility of the Development.

7.51. Each of the wireframe models will then be developed further into photomontages to help illustrate the predicted impact of the Development.

7.52. For each viewpoint where it is possible to view a long distance 360 degree (°) panorama, a series of four 90° baseline photography panoramas will be produced, illustrating the full panorama as seen from the viewpoint locations. Each panorama will be accompanied with an associated wireline illustrating cumulative schemes. These will be presented so that each 90° angle of view is read in a clockwise direction, starting with the section which includes the Development. For those viewpoints where a wide panorama is not available, a 90° baseline panorama in the direction of the Site will be produced, along with any other 90° angles of view to illustrate the wider panorama as appropriate.

7.53. Ancillary elements such as the permanent anemometer mast, access tracks and the substation will be shown in photomontages for viewpoints within 5 km when they would be visible. Beyond 5 km it is considered unlikely that the ancillary elements would form more than a limited element of the entire Development when compared to the turbines.

Key Questions

7.54. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Are there any comments on the proposed list of viewpoint locations?
- Are there any further wind farm sites, to those listed in Appendix C, to consider as part of the cumulative assessment?

ECOLOGY

8.1. This section of the Updated Scoping Report describes the proposed methods that will be followed to confirm and further establish the ecological baseline relevant to the Development. The methods and approach that will be followed to evaluate and assess the potential effects of the Development on the ecological baseline (Important Ecological Features (IEFs)) will also be identified. A discussion of ornithological methods and assessment is provided separately in Chapter 9.

8.2. Initial baseline surveys were carried out between May and September 2013. The survey areas were defined with reference to the Site and encompassed a series of buffers. The buffer size is dependent on the sensitivity of key species to potential effects associated with the Development. Survey methods followed contemporaneous best practice guidance at the time.

8.3. As outlined in SNH's document 'General advice, sources of guidance and information for onshore wind farms'[30], after 18 months, the non-avian protected species baseline data may be considered out of date. This may therefore need updating to provide a sufficiently robust baseline to inform the Ecological Impact Assessment (EcIA) for accurate determination of the potential impacts from the Development. As a result, it is proposed that baseline surveys will be undertaken in 2018 to provide an updated baseline.

2013 Scoping Opinion

8.4. In 2013, SNH confirmed they were satisfied that the main natural heritage receptors had been identified. In particular:

- Attention was drawn to Stroanshalloch Loch and the area around it being part of a mire system supporting rare sedge species. Careful consideration should be given to turbine location in respect of this mire.
- Although not a Red Squirrel Priority Area, the importance of the region for this species was noted. It was advised to consider tree species selection for any reforestation proposed.

8.5. The Biodiversity Officer from the Council was content with the scope of surveys and evaluation. An Extended Phase 1 Survey of habitats would be welcomed.

8.6. SEPA commented that groundwater dependent terrestrial ecosystems (GWDTEs) should be identified and location of Development infrastructure considered with this information.

[30] SNH (2016) General advice, sources of guidance and information for onshore wind farms. Available at: https://www.snh.scot/sites/default/files/2017-07/A1150291%20-%20SNH%20General%20pre-application%20and%20scoping%20advice%20%20to%20developers%20of%20onshore%20wind%20farms.pdf [Accessed Feb 2018]

Desk Study

Statutory Designated Sites

8.7. A search was undertaken for statutory designated sites within 5 km, with this search area extended to 10 km for Special Areas of Conservation (SAC). A review of the SNH Information service (SNHi[31]) identified two sites of (non-avian) nature conservation value within the search area (Table 8.1).

Table 8.1: Summary of Statutory Designated Sites within the Search Area

Site	Designation	Distance and Direction	Description/Principal Interest
Upper Nithsdale Woods	SAC	7.0 km ENE	Mixed woodland on base-rich soils associated with rocky slopes.
Tynron Juniper Wood	SAC	10.0 km E	Juniper on heaths or calcareous grasslands

8.8. Five areas of woodland listed in the Ancient Woodland Inventory (AWI) were recorded within 2km of the Site.

8.9. Designated sites within the wider area are shown on Figure 6, Appendix A.

Previous Baseline Survey Results Summary

Habitats & Vegetation Surveys

8.10. An Extended Phase 1 Habitat Survey and National Vegetation Classification (NVC) Survey were carried out in September 2013 within the Site. Habitats recorded were dominated by dense Sitka spruce (*Picea sitchensis*) plantation, with very little ground flora. A small area of (modified) blanket mire was recorded; however it was restricted to the area around Stroanshalloch Loch, a small mesotrophic lochan on the south west of the Site. Native broadleaved woodland including ash (Fraxinus excelsior), sessile oak (*Quercus petraea*), and silver birch (*Betula pendula*) was recorded to be planted on an area of marshy grassland in close proximity with Stroanshalloch burn, which form the northern boundary of the Site.

8.11. Other habitats included areas of felled plantation, some of which had been recently replanted with sitka spruce (to the west of the Site) and others which had become established with sedges, grasses and tall ruderal vegetation. Woodland rides were predominately purple moor-grass (*Molinia caerulea*) dominated marshy grassland. Dry heath was recorded on the edges of forest roads and tracks as well as a few scattered patches throughout the Site. Further habitats included dry stone walls and quarry areas

[31] SNHi – Available at: http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/ [Accessed Feb 2018]

Protected Species Surveys

8.12. Protected species surveys were carried out between May and September 2013, and included surveys for otter (*Lutra lutra*), water vole (*Arvicola amphibius*), and badger (*Meles meles*). No evidence of badger or water vole were recorded at the time of survey, however the presence of otter was recorded in the southwest of the Site near Stroanshalloch Loch and Troston Loch.

Bat Surveys

8.13. Bat surveys were carried out monthly between May and September 2013. Surveys included transects, remote monitoring and roost suitability. The results of these surveys are presented below.

8.14. Transect surveys were undertaken on three occasions seasonally, in May, July and September 2013, in accordance with Bat Conservation Trust (BCT) survey guidelines[32]. The survey recorded very low levels of bat activity, and was dominated by common and widespread species of low to moderate risk from wind farm development[33] including common and soprano pipistrelle (*Pipistrellus pipstellus/pygmaeus*).

8.15. Remote monitoring surveys were undertaken on three occasions seasonally, in May, July and September 2013, in accordance with BCT survey guidelines[32]. The survey recorded low levels of bat activity, dominated by common and widespread species of low to moderate risk from wind farm development[33] including common and soprano pipistrelle, as well as *Myotis* species. Survey also recorded very infrequent activity from potential high risk species[33] (approximately 1% of activity) such Nathusius' pipistrelle and *Nyctalus* species.

8.16. No evidence of, or suitability for, roosting bats were recorded during 2013 surveys.

Great Crested Newt

8.17. Great crested newt (GCN) Habitat Suitability Index (HSI) assessments were carried out on Stroanshalloch Loch and Troston Loch in March 2013. As both waterbodies were assessed to have average to good suitability to support GCN, great crested newt presence/absence surveys (including bottle trapping, netting, torching, and egg search surveys) were carried out between April to June 2013 (fours survey in total), however no GCN were recorded.

Fisheries Surveys

8.18. Fisheries surveys were carried out between April and September 2013 across nine sampling sites within close proximity to the Site.

[32] Hundt, L. (ed.) (2012) Bat Surveys: Good Practice Guidelines (2nd Edition). Bat Conservation Trust.
[33] Natural England (2014) Bats and onshore wind turbines (Interim guidance) (TIN051)- Third edition

8.19. The habitat quality and utilisation potential of the survey sites was generally good with a small number of sites recorded as moderate for potential, and one survey site was rated as low. The majority of assessed sites generally consisted of moderate/good combinations of flow types, depths and variable substrates providing good habitat for juvenile salmonids. Within the selected survey reaches, there were few areas of suitable habitat for juvenile lamprey (*Lampetra sp*.), however none were recorded at the time of survey.

Baseline Update Methodology

Desk Study

8.20. In order to augment baseline survey data collected and, if necessary, refine the survey scope, recent records (within 20 years) of protected and/or notable species and details of sites of ecological interest will be sought. Data consultation will aim to collect up-to-date records of the following: non-statutory designated sites located within 2 km of the Site, (extended to 5 km for those designated for bats); rare, notable or protected flora and fauna within 5 km of the Site (extended to 10km for bats); and records of invasive, non-native species within 2 km of the Site.

8.21. In the first instance, records will be sought from publically available data resources, as well as the following organisations:

- SNH;
- Dumfries and Galloway Environmental Resources Centre (DGERC);
- Dumfries and Galloway Bat Group;
- Red Squirrels in South Scotland;
- Scottish Wildlife Trust;
- Galloway Fisheries Trust
- Nith District Salmon Fisheries Board;
- Dumfries and Galloway Biodiversity Action Plan; and
- National Biodiversity Network.

Field Surveys

8.22. Ecological surveys are necessary to provide an up-to-date baseline against which the potential effects of the Development can be assessed. The limit of baseline surveys has been defined by the Site boundary and thus, encompasses all areas in which development may take place. Where necessary and accessible, some surveys will extended beyond this Site boundary to provide the required baseline information.

Habitats and Vegetation

8.23. Due to extensive clear-felling, there are likely to be significant changes in the baseline habitats. As such, it is recommended that the Extended Phase 1 habitat survey is ground truthed and updated in areas where the existing baseline appears to differ from the previous 2013 conditions outlined above.

8.24. The survey will be carried out during the optimum period (April to September 2018) following standard methods[34]. The survey will cover the relevant areas of the Site and immediately adjacent areas (up to 200 m), with additional effort targeted at identifying the locations of any rare or scarce plants or invasive species. The survey will allow features of ecological constraint to influence design, an assessment of the potential impact of habitat loss due to the construction of the Development and will also help to guide the scope of other ecological surveys by assessing the potential of habitats to support notable fauna.

8.25. Should the presence of notable or sensitive habitats be recorded during the survey, such as peatlands or Ground Water Dependant Terrestrial Ecosystems (GWDTE), an NVC[35] survey will be carried out up to 200 m of the Site.

Protected Species

Otter and Water Vole

8.26. Surveys for evidence of otter and water vole will be carried out in accordance with SNH survey guidelines[36],[37] across suitable habitats including up to 200 m upstream and downstream of riparian features, as well as waterbodies and wetland areas within the Site during spring to autumn 2018.

Red Squirrel

8.27. Suitable habitats (particularly mature coniferous plantation) within 50 m of the Site will be surveyed in accordance with SNH guidance[38], for evidence of red squirrel such as dreys and feeding cones. If deemed necessary, camera trapping will be deployed to confirm the presence of red squirrel dreys.

Pine marten

8.28. Suitable habitats (particularly mature coniferous plantation) within 250 m of the Site will be surveyed in accordance with SNH guidance[39], to assess

[34] Joint Nature Conservation Committee (JNCC) (2004) Handbook for Phase 1 habitat survey: a technique for environmental audit. JNCC.
[35] Rodwell, J. S. et seq. (1992) British Plant Communities Vols 1–5, Cambridge University Press: Cambridge.
[36] SNH (2016) Protected Species Advice for Developers: Otter
[37] SNH (2016) Protected Species Advice for Developers: Water Vole
[38] SNH (2016) Protected Species Advice for Developers: Red Squirrel
[39] SNH (2016) Protected Species Advice for Developers: Pine Marten

their potential to support pine marten and to identify field signs including dens. If deemed necessary, camera trapping and DNA analysis of scats will be undertaken to confirm the presence of pine marten.

Bat Surveys

8.29. Bat activity at the Site will be surveyed according to BCT[32], SNH and Natural England (NE)[40],[33] guidance and as follows:

- Transect surveys - Habitats within the survey area will be walked and/or driven, where accessible, to provide a transect route with five-minute point counts at regular intervals. Transect surveys will be carried out seasonally (Spring, summer & autumn) on three separate occasions between May and September 2018.
- Automated Surveys - AnaBat detectors will be deployed to automatically record bat activity on three occasions seasonally between May and September 2018. On each occasion the AnaBat detectors will be deployed for a minimum of five consecutive nights. The AnaBats will be located within the potential turbine layout, as well as in a range of representative habitats and control sites.
- Roost Suitability surveys – Data searches will be conducted to identify any known roost sites in the vicinity of the Site. Potential bat roosts onsite will be identified and, if necessary, emergence/re-entry surveys will be conducted at potential roost sites considered to be at risk.

8.30. As habitats with the Site are likely to be sub-optimal for high risk bat species and very low levels of these species were recorded during 2013 baseline surveys, a precautionary low risk seasonal approach will be taken to bat activity surveys. Data will be analysed immediately after being collected, and should bat activity, or high-risk species such as noctule (*Nyctalus noctula*) or Leisler's bats (*Nyctalus leisleri*) be recorded at notably higher levels of activity than previously recorded, then the survey scope will be increased appropriately, for example to a moderate risk monthly survey approach.

Fisheries Surveys

8.31. Due to habitat suitability and presence of salmonids such as brown trout, recorded during previous baseline surveys, update fish fauna surveys will be carried out in Spring–Autumn 2018. Fish populations will be surveyed by electrofishing and will be carried out to Scottish Fisheries Co-ordination Centre protocols[41], and under licence from the Nith District Salmon Fisheries Board (NDSFB) or the Scottish Government. Surveys will include both fully quantitative and semi-quantitative assessments where possible. If a fish fauna survey licence is not granted by the NDSFB (as was the case in 2013) an assessment of fish fauna in the area will be conducted by way of a desktop study.

[40] SNH has adopted NE TIN051 guidelines in relation to bats and wind farm developments.
[41] Scottish Fisheries Co-ordination Centre (2007) *Electrofishing Team Leader Training Manual*. Fisheries Management SVQ Level 3: Manage Electrofishing Operations. Inverness College.

Great Crested Newt

8.32. Habitat Suitability Index (HSI) surveys carried out in 2013, recorded GCN suitability at two ponds, however no GCN were recorded. As a precaution it is recommended that HSI surveys are re-done in early spring at the previously assessed sites, and any other suitable ponds within up to 500 m of the Site.

8.33. If suitability is recorded during HSI, eDNA surveys will be required to confirm presence/absence of the species in the corresponding ponds. This involves sample collection and lab processing and must take place in mid/late April 2018 to allow further population assessment surveys to be carried out appropriately if positive results are found. Population assessment surveys would involve six survey site visits utilising three suitable survey methods per site visit (such as bottle trapping, netting, torching, and egg/larva search surveys). These surveys must take place between April – June 2018, with three of six surveys required to take place between mid-April and mid-May (peak GCN season).

Other species

8.34. Habitats will be assessed for their potential to support other notable species and a watching brief will be maintained during ecological surveys to record observations. Additional species-specific surveys will be undertaken as dependent on the results of consultation, desk study and field observations.

Ecological Impact Assessment Methodology

8.35. The Site is dominated by commercial forestry plantation, much of which has been recently felled. It is interspersed by tributaries of the Water of Ken. The remainder of the Site is surrounded by open moorland and other areas of existing and felled forestry plantation. The scale and location of the Development will limit potential ecological effects, since the turbines and the majority of associated infrastructure will be located within commercial forestry, which is a habitat generally considered to be of limited ecological value.

8.36. The assessment of ecological impacts will follow the guidance document produced by the Chartered Institute of Ecology and Environmental Management (CIEEM) ensuring a transparent and scientifically rigorous approach to EcIA[42]. These guidelines set out the process for assessment through the following:

- Collation of baseline ecological information through desk study and field surveys;
- Identification and characterisation of ecological impacts from all phases of the Development;

[42] CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. 2nd edition, Chartered Institute of Ecology and Environmental Management, Winchester

- Incorporation of measures to mitigate identified effects;
- Assessment of significance of residual effects following mitigation;
- Identification of appropriate compensation to offset significant residual impacts; and
- Identification of opportunities for ecological enhancement.

8.37. The assessment will include proposals for the avoidance and mitigation of potentially adverse effects and will consider enhancement measures to increase biodiversity in the area. Potential cumulative ecological effects with other nearby developments will also be addressed. Mitigation will be identified where the assessment indicates that there is a potential significant impact on important habitats and species as a consequence of the Development.

Important Ecological Features (IEFs)

8.38. Although some baseline surveys require updating, the known baseline at the time of writing suggests that a number of ecological sensitivities may exist. In the context of EcIA these features are defined as IEFs, and for the Development may include:

- Sensitive habitats (such as Annex I, Scottish Biodiversity List (SBL), and potential GWDTEs (SEPA, 2014));
- Riparian mammals – a number of watercourses and waterbodies located within and in close proximity to the Site have potential to support otter;
- Woodland mammals – standing and recently felled coniferous plantation woodland as well as marginal and connecting habitats have the potential to support pine marten & red squirrel;
- Aquatic species – aquatic habitats within and in close proximity to the Site have the potential to support salmonid species; and
- Bats – habitats within the Site support commuting and foraging bats of low/moderate risk from wind farm development.

Determining Significance

8.39. The approach to assessment outlined in Chapter 2 will generally be followed in the EIA Report. Definitions of sensitivity and magnitude specific to ecology receptors will be used and defined in detail.

Potential Effects

8.40. The ecological assessment will focus on the potential effects of indirect and direct impacts upon IEFs during construction, operation and decommissioning of the Development. This will be assessed in terms of, but not limited to, the effects of the following;

- Direct impacts on nearby designated sites and their qualifying interests;
- Direct and indirect habitat loss and disturbance - temporary or permanent loss to terrestrial or aquatic habitats;

- Turbine-related bat mortality - death or injury by collision with the turbine blades; and
- Indirect and direct effects on protected fauna including, but not limited to, otter, pine marten, water vole, red squirrel, and Salmonid fish.

Key Questions for Consultees

8.41. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Is the list of potential effects and key sensitive receptors comprehensive?
- Are the baseline survey methods and level of proposed survey effort appropriate taking into consideration current guidance; the proposed scale and location of the Development; survey work completed to date; and the key findings and identified sensitive receptors?
- Are the proposed receptor evaluation and impact assessment methods considered appropriate and comprehensive?

ORNITHOLOGY

9.1. This chapter of the Updated Scoping Report describes the proposed approach to the assessment of potential effects from the Development on bird populations and their supporting habitats (i.e. key ornithological receptors). It includes the methods for the desk study, baseline survey, receptor evaluation and the assessment of the significance of any identified effects.

2013 Scoping Opinion

9.2. SNH provided the below comments in regard to ornithology for the 2013 scoping opinion:

- It was acknowledged that VP and survey requirements had been previously discussed with the applicant.
- Following review of the supporting figures it was noted that the vantage point surveys did not cover the entire Site particularly to the north of turbines 6 and 7. It was noted that should survey data suggest that this area is important in terms of flight paths then SNH would anticipate a flexible approach to ensure adequate coverage for a robust assessment of impacts to be undertaken.
- They agreed with the main receptors identified and particularly the importance for peregrine falcon. A robust cumulative assessment is to be undertaken.

9.3. RSPB also provided comment in 2013, stating:

- They were generally satisfied that the species and methodology outlined in the Scoping Report adequately covered the potential impacts on wild birds.
- They strongly recommended obtaining data from the Dumfries & Galloway Environmental Resource Centre.
- They proposed that impacts on birds be set in the context of both SNH's Natural Heritage Zones (NHZs) and Local Authority boundaries.
- They agreed that peregrine falcon is a sensitive receptor at the site and reiterated the importance to fully assess collision risk cumulatively with other sites.
- They expressed their wish to see plans for habitat creation and enhancement included in the Environmental Report.

9.4. The Applicant can confirm that the points raised in 2013 by the consultees have been considered with regard to survey design, methodologies and effort; and in developing the assessment methodology, allowing a robust assessment of impacts to be undertaken. The remaining comments will be addressed within the EIA.

Survey Effort

9.5. SNH guidance[43] (2005, revised 2014) recommends that a minimum of two years' of bird survey are required. Furthermore, it recommends that a minimum of 72 hours of Vantage Point (VP) observations are gathered per VP, split by season (36 hours breeding and 36 hours non-breeding), per year.

9.6. To comply with SNH guidance baseline surveys commenced in October 2012 and continued until end of August 2013 (providing Year 1 of data). The second round of surveys commenced in April 2017 and will continue until end of March 2018 (providing Year 2 of data). In Year 1, a total of 151.5 hours of VP observations were undertaken across two VPs, providing a minimum of 75 hours per VP (37 hours breeding and 38 hours non-breeding). In Year 2, a total of 72.33 hours of VP observations were undertaken across two VPs during the breeding season, meeting the minimum requirement. VP observations are still ongoing and it is fully expected that by the end of March 2018 the required survey effort will be met for the non-breeding season.

9.7. The survey area was defined with reference to the Site and encompassed a series of buffers of up to 2 km radius from the Site Boundary, with buffer size dependent on the sensitivity of key species to potential effects associated with the Development (Figure 7, Appendix A).

9.8. Survey methods followed contemporaneous best practice guidance; further details of the survey methods and survey effort are provided in Appendix D.

9.9. Baseline ornithological surveys included winter, spring, summer and autumn flight activity surveys from strategically located vantage points, breeding bird surveys and winter transects. Vantage point locations and viewsheds are illustrated in Figure 8, Appendix A.

Baseline

Designated sites

9.10. The site boundary when first sent to NRP by the Applicant, contained an area within which a known peregrine nest site was located. NRP advised the Applicant of this at a very early stage and advised against locating turbines within that area.

9.11. As a result of this, the site boundary was redefined to ensure that no disturbance to this nesting site would occur.

[43] SNH (2014). Recommended bird survey methods to inform impact assessment of onshore wind farms. Available at: https://www.nature.scot/sites/default/files/2017-09/Guidance%20note%20-%20Recommended%20bird%20survey%20methods%20to%20inform%20impact%20assessment%20of%20onshore%20windfarms.pdf [Accessed 01/03/2018]

9.12. The Site is not located within or adjacent to any statutory sites designated for ornithological interest and there are no such sites within 10 km of the Site.

9.13. The only statutory designated site for ornithological interest within 20 km of the Site is the Loch Ken and River Dee Marshes Special Protection Area (SPA) which is situated c.13 km to the south and supports wintering populations of Greenland white-fronted goose (*Anser albifrons flavirostris*) and greylag goose (*Anser anser*). Potentially geese may over fly the site, although SNH had indicated that numbers of geese were relatively small at the SPA.

9.14. Following current SNH guidance[44] on the connectivity of SPA populations with supporting habitats in the wider environment, the distances to all SPAs in the surrounding area are greater than the reported range/connectivity distance for the qualifying species listed for the individual SPAs or despite being within 20 km of a goose SPA have no connectivity with the qualifying interests of the SPA (Mitchell, 2012[45]).

Desk Study and Consultations

9.15. Having conducted baseline wind farm surveys across Dumfries and Galloway over many years, NRP has familiarity with the general area and its birds. In addition, the NRP principal surveyor lives locally to the Site and has a sound knowledge of the area. He is also an active member of the Dumfries and Galloway Raptor Study Group.

9.16. Such knowledge confirmed the existence of a peregrine nest site within the original proposed Development area (to the north of the B729) and this information was passed back to the Applicant at a very early stage. This resulted in the parcel of land to the north of the B729 not being considered further for wind turbine development.

9.17. The Applicant consulted with SNH in 2012 regarding the need for migration watches and SNH commented, via John Gibson (Operations Officer, South of Scotland)[46], that there was not felt to be a need for migration watches. It is considered that this remains the case.

Summary of Baseline Surveys

- **Geese and swans** – no regular local or passage movements of geese or swans over the Site.
- **Raptors** – an active goshawk nest was located within the Development site in 2017, which was successful, and fledged juveniles were seen; an active peregrine nest was recorded within 2 km of the site in 2013 and 2017, however in 2013 no breeding

[44] SNH (2016). Assessing Connectivity with Special Protection Areas (SPAs). Available at: SNH guidance (SNH, 2012) on the connectivity of SPA [Accessed 01/03/2018]
[45] Mitchell, C. 2012. *Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland.* Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge. 108pp
[46] Email from J Gibson (SNH) to Infinergy 13/09/12.

attempt was made and in 2017 the breeding attempt failed. No red kite breeding sites were found within 2 km of the site.

Low levels of flight activity, gathered from over 265 hours of observation, were recorded for peregrine, goshawk and red kite within 500 m of the site.

- **Black grouse** – there was no evidence of lekking black grouse within the site or survey area.
- **Waders** – no breeding wader species were present within the site or survey area.
- **Barn owl** – no active barn owl breeding sites were identified within 1 km of the site, however several old sites and recently used roosts were located.
- **Other species** – the survey area supports a suite of breeding songbirds typically associated with upland moorland habitats and commercial conifer plantation in south-west Scotland.

9.18. Further detail on baseline survey results is provided in Appendix D.

Potential Significant Effects

9.19. Particular consideration will be given in the assessment to potential effects on bird species whose populations are of moderate to high conservation concern and that belong to taxonomic groups that are considered to be particularly susceptible to impacts from the Development. These include:

- Species listed on Annex1 of European Council Directive 2009/147/EC[8] on the conservation of wild birds (i.e. 'Annex 1' species), in particular those that may be associated with populations of species that are qualifying interests of SPAs in the wider area;
- Species listed in Schedule 1 to the Wildlife and Countryside Act 1981[9], as amended (i.e. 'Schedule 1' species); and
- Species of national conservation concern, not included within the above categories, but that are present within the study area in nationally or regionally important numbers (e.g. species on the UK Red List of birds of conservation concern[47]).

9.20. The key potentially significant effects on ornithology receptors arising from the Development can be broadly summarised as follows:

- Disturbance and / or displacement from supporting habitats during construction works;

[47] Eaton, M.A., Brown, A.F., Noble, D.G., Musgrove A.J., Hearn, R., Aebischer, N.J., Gibbons, D.W., Evans, A. and Gregory, R.D. 2009. *Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and Isle of Man*. British Birds 102**:** pp. 296-341

- Loss / degradation of habitats through construction works, permanent structures and access tracks;
- Displacement from and disturbance to foraging, nesting, roosting habitat from the operational Development; and
- Mortality from collision with wind turbine blades; and
- The potential for cumulative effects arising from the combined effects of other existing and proposed developments within the wider area affecting the same bird populations.

Evaluation and Impact Assessment

9.21. The assessment will follow the process set out in the EIA Regulations and guidance on the implementation of the Birds and Habitats Directives (SERAD 2000). The process of evaluating the effects of the Development on birds will seek to ensure that the competent authority has sufficient information to determine whether the Development (either alone or in combination with other developments) is likely to have a significant effect on bird interests.

9.22. Effects will be assessed against the existing baseline conditions, i.e. without the Development present. This assessment will be carried out assuming that there are no significant adverse effects on the existing population, range or distribution of a species (i.e., no significant effect on the species' conservation status); and no significant interference with the flight paths of migratory birds.

9.23. The assessment will therefore first identify the possible effects of the Development and will then consider the likelihood of their occurrence. A judgement will then be made as to whether or not these effects are significant with respect to the EIA Regulations. In judging whether a possible effect is significant or not, two principal factors will be taken into account:

- The nature conservation importance of the bird populations present; and
- The magnitude of the likely effect.

9.24. In assessing the effects, emphasis will be given to the national and regional populations of the species. Inconsequential effects will be excluded.

9.25. The EIA Report chapter will include proposals for measures to mitigate any identified adverse effects of the Development on bird species. Potential measures including micro-siting, the review of construction timing and land management regimes will be considered, as appropriate, in consultation with the appropriate statutory consultees. The need for, and scope of, further post consent monitoring of bird activity in relation to the Development will also be defined as part of the assessment process.

9.26. Impacts will be assessed in relation to species' population, range and distribution. Key considerations will include territory occupancy, breeding success, foraging success and ranging behaviour. The assessment will:

- Evaluate the nature conservation importance of the bird interest in a systematic manner; and
- Estimate the magnitude of likely impacts on each species as a result of the proposals.

9.27. The significance of each potential effect will be judged by integrating scales relating to ecological value, behavioural sensitivity and effects magnitude in a reasoned way, in the context of the status of, and trends within, species' regional populations (as defined by SNH Natural Heritage Zones [NHZ]). Measures will be presented to mitigate any effects deemed to be significant in terms of the EIA Regulations.

9.28. The effects of the Development will be assessed in isolation and in combination with predicted effects of other wind farm developments in the same NHZ. As part of this process, data for other wind farm developments will be sought.

Key Sensitive Receptors

9.29. Given the habitat within the Site and within a 2 km buffer, potential sensitive receptors include **goshawk** and **peregrine**. Surveys to assess the status of these species during the breeding season are described in Appendix D. The status of these species during the non-breeding season will be ascertained following completion of the winter surveys which are due to be completed in March 2018.

Key Questions for Consultees

9.30. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree that SPAs can be scoped out of the EIA given the lack of connectivity?
- Are the consultees content with and / or have any comments on the list of effects and key sensitive receptors?
- Are the consultees content with and / or have any comments on the baseline survey methods and level of survey effort, taking into consideration current guidance, the proposed scale and location of the Development, survey work completed to date and the key findings and identified sensitive receptors?
- Are the consultees content with and / or have any comments on the proposed receptor evaluation and impact assessment methods?

CULTURAL HERITAGE

10.1. For the purposes of the assessment, cultural heritage interests are deemed to include both above ground (built heritage) and below ground remains. The assessment will consider both direct and indirect (largely visual) effects as well as cumulative effects upon the following cultural heritage receptors:

- Archaeology – above and below ground, designated or not. Consideration will be given to the potential for unknown (buried) archaeological remains to exist within the Site;
- Cultural Heritage - World Heritage Sites, Scheduled Monuments, Listed Buildings, Inventoried Gardens and Designed Landscapes (GDL), Inventoried Battlefields, Protected Wrecks and Conservation Areas;
- Archaeological Areas as shown on the relevant Local Development Plan; and
- Heritage assets marked or publicised (for example archaeological/heritage trails).

10.2. The assessment will be conducted with reference to the relevant statutory and planning frameworks for cultural heritage and in particular cognisance will be taken of HES Policy Statement June 2016 (HESPS)[14]. The assessment will be undertaken in accordance with current best practice and guidelines, which includes the Chartered Institute for Archaeologists (CIfA) Standards and Guidance[48] and HES's Managing Change in the Historic Environment Series, specifically 'Managing Change in the Historic Environment: Setting' (2016)[49].

10.3. Initial analysis was undertaken in 2013 of the Site and cultural heritage receptors with the potential to be affected by the Development. Whilst this was not published, it forms the basis upon which the assessment will be built, with additional data searches and site visits undertaken to confirm effects.

2013 Scoping Opinion

10.4. Comments were received from both the Council Archaeologist and Historic Scotland (now Historic Environment Scotland). The Council Archaeologist raised the potential for direct and indirect effects noting in particular:

- That the Site falls into Landscape Character Type: Foothills with Forest, Stroan Unit which has a Settlement and Archaeology sensitivity rating of Medium for turbines of over 80 m in height;

[48] Chartered Institute for Archaeologists (2017) Standard and Guidance for Historic Environment Desk-Based Assessment, Published December 2014, Updated January 2017 Available at: http://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_3.pdf [Accessed 01/05/2017]
[49] HES (2016). Managing Change in the Historic Environment: Setting. Available at: https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549 [Accessed 01/05/2017]

- The Historic Environment Record (HER) identifies a number of undesignated features within the Site area. A full ground survey is not required as the area is afforested, but known sites should be visited;
- A finalised list of wirelines/photomontages is to be agreed with the Council Archaeologist once a ZTV is undertaken; and
- Stroanfreggan and Bardennoch to Garryhorn Archaeological Sensitive Areas (ASAs) to be assessed. These are both on Heritage Trails.

10.5. Historic Scotland considered that there was the potential for significant impacts on the setting of some natioanally important heritage assets, drawing particular attention to the following:

- Craigdarroch House;
- Lochrinnie Mote; and
- Craigmuie Moor, Watch Knowe, fort – concerns about the impact of the Development on wider setting.

Visualisations from each of these heritage assets towards turbines welcomed.

10.6. The above points have been considered when developing the assessment methodology detailed below, taking into account the concerns of the consultees.

Methodology

10.7. A desk-based assessment (DBA) of cultural heritage records will be compiled to establish the baseline against which the impact assessment will be carried out. Data will be gathered from the following sources:

- Dumfries and Galloway Historic Environment Record (HER);
- Aerial photographs and other cartographic information on pre-recent land uses;
- The National Monuments Record of Scotland Canmore datasets;
- HES's databases of nationally designated sites; and
- Local Studies Libraries and other archives as appropriate.

10.8. A study area of 1 km around the Site will be used to collect data to inform on the archaeological potential of the Site. For purposes of indirect impact assessment, data on nationally designated cultural heritage features will be collected to a maximum of 15 km from the Site centre.

10.9. Initial information relating to cultural heritage and archaeology will be gathered through a preliminary desk top search to identify potential features of interest.

10.10. The DBA will be augmented by a walkover survey to provide information on the archaeological potential of the area and to validate the documentary evidence. This fieldwork will be conducted to:

- Assess and validate documentary data collected;
- Identify the extent and condition of any visible monuments;
- Determine whether previously unrecorded historic features are visible; and
- Subject to the findings of the DBA the requirement for and extent of any additional surveys will be agreed in consultation with the Council's Historic Environment Team.

10.11. An assessment will be made of the potential indirect effects upon the setting of cultural heritage features including historic landscapes. This assessment will be made against the ZTV produced as part of the LVIA. This may also include visual representations such as photomontages and / or wirelines.

10.12. The assessment will proceed from a consideration of the sensitivity of a cultural heritage feature against the magnitude of any potential change, to arrive at the significance of the effect. The assessment of sensitivity of archaeological and historical assets reflects the relative weight which statute and policy attach to them, principally as published in HESPS, with regard for professional judgement.

10.13. The assessment will be supported by presentation of the data in assessment tables, with a gazetteer and location plan. The Cultural Heritage Chapter will also include proposals for mitigation of any identified effects, where necessary.

10.14. Consultation will be undertaken with the Dumfries and Galloway Archaeologist, HES and other stakeholders, as appropriate.

Current Baseline Knowledge

10.15. Preliminary desk studies indicate that there are no Inventoried Battlefields or World Heritage Sites within 15 km of the site. There are two GDLs within 15 km of the site. These are Drumlanrig Castle and Maxwelton (Glencairn Castle). Drumlanrig Castle is situated approximately 13 km to the north-east, and Maxwelton is located approximately 10 km west of the proposed Development site boundary.

10.16. There are two Scheduled Monuments within 5 km of the site, which are considered to have the potential to receive a significant effect. These are detailed in Table 10.1.

Table 10.1: Scheduled Monuments within 5 km of the Site

Scheduled Monument Number	Scheduled Monument Name	Approximate Distance and Direction
1101	Craigmuie Moor, Watch Knowe, fort	4.4 km south-east
1125	Lochrinnie Mote, motte 250 m west-north-west of Craigmuie Lodge	3.2 km south-east

10.17. There are fourteen Listed Buildings (of varying grades) situated within 5 km of the Site. Of these buildings there are two Category A and nine Category B Listed Buildings, as detailed in Table 10.2.

Table 10.2: Category B Listed Buildings with 5 km of the Site

Historic Building Number	Listed Building name	Category	Approximate Distance/ Direction
10340	Craigdarroch	A	2.5 km east
10307	Glenluiart	A	4.8 km east
10341	Craigdarroch, Ice House	B	2.5 km east
10308	Castlefairn Bridge	B	3.5 km south-east
6771	Craigdarroch, Sawmill Cottage	B	4.1 km east
10317	Shankfoot, Loch Urr Road, Castlefairn Water, Shankfoot Bridge	B	4.2 km south-east
10305	Dungalston, farmhouse	B	4.5 km east
10308	Glenluiart, Outbuidlings	B	4.8 km east
10308	Glenluiart, Lodge	B	4.8 km east
10308	Glenluiart Stable	B	4.8 km east
10338	Caitloch	B	4.8 km east

10.18. Figure 9 shows the location of these Listed Buildings and Scheduled Monuments.

Key Questions for Consultees

10.19. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the Consultees agree with the proposed methodology and scope of assessment?
- Is there any current or recent archaeological work or projects being undertaken within or in the vicinity of the Site, the results of which

may not yet be recorded in the HER or National Monuments Record for Scotland?

- Are the Consultees aware of any further sites with statutory protection within the wider landscape whose settings may be affected by the Development?
- Do the Consultees have details of any cultural heritage sites in the vicinity of the Site which it considers may raise significant issues within the EIA process for this Development?

GEOLOGY AND PEAT

11.1. An assessment of the impact of the Development on geology and peat will be undertaken. This will establish the baseline conditions, inform the assessments and designs whilst determining any suitable mitigation measures required.

2013 Scoping Opinion

11.2. Comments were received in relation to geology and peat in the 2013 Scoping Opinion as follows:

- SNH requested that the peat is surveyed to Phase 1 standard. This would be used to inform a peat slide risk assessment, which should be used to develop the layout; and
- SEPA provided general advice in relation to peat and construction good practice. They commented that peat depth survey should be undertaken and likely volumes of surplus peat quantified. An approach of minimising disruption to peatland is to be taken.

11.3. These points have been considered in the methodology below.

Baseline Conditions

11.4. The Site occupies an undulating upland location with available British Geological Survey (BGS) mapping[50] indicating that the Site is mainly underlain by either glacial till or shallow rock. Peat was recorded in BGS mapping in the vicinity of Stroanshalloch Loch in the west of the site.

11.5. Consistent with the BGS mapping, peat investigations comprising 100 m centre spaced probing was undertaken as part of the initial EIA survey works in October 2013. During the survey works a total of 142 probes were sunk. The probing was undertaken in accessible areas, within forestry rides, open hillside and along existing access tracks.

11.6. Peat deposits were generally thin with peat only recorded in two distinct areas, one within the vicinity of Stroanshalloch Loch and an area in the centre of the site. Peat was recorded up to 3.0 m thick at both locations and these areas were noted to be topographically low lying. Denser probing was undertaken near to the loch to confirm the extent of the deep pocket.

11.7. BGS mapping information on solid geology indicates that the entire Proposed Development site is Wacke of the Glenlee Formation. Minor dykes were noted in the north of the site described as Armathwaite Cleveland Dyke comprising Basaltic Andesite rocks.

[50] British Geological Survey (BGS) Geoindex Onshore. Available at: http://mapapps2.bgs.ac.uk/geoindex/home.html [Accessed on 08/02/2018]

Potential Effects

11.8. It is unlikely that the Development will have significant adverse effects on the geology of the Site, with the exception of effects on peat; therefore it is proposed that this Chapter will solely focus on effects on peat as a result of the Development.

11.9. Development of wind farms on peatlands can lead to potential peat slide risk. An assessment of the likely effects on peatlands and the potential for peat slide risk will be undertaken as part of the EIA.

11.10. Excavation of peat during construction of site infrastructure, including access tracks, crane hardstandings, turbine foundations and cable trenches may lead to potential effects on peat habitat. In addition, natural surface drainage systems may change which could lead to drying and oxidation of in-situ peat.

11.11. Disturbance of organic rich peat soils could result in carbon loss and is further considered within Chapter 19.

Potential Mitigation

11.12. Measures will be taken during the design phase of the Development to ensure that infrastructure is located appropriately to reduce the potential risk of peat slide. This includes siting turbines and other infrastructure within areas of shallow topography which contain limited or no peat. Peat greater than 1 m is classified as 'deep peat' and should be avoided where possible during the design phase.

11.13. The excavation of peat will be minimised or avoided where possible. Where peat excavation cannot be avoided, an approach will be developed for peat restoration and reinstatement in accordance with best practice. Monitoring of peat re-instatement or restoration will be carried out throughout the lifetime of the Development.

11.14. A detailed Peat Management Plan (PMP) would be prepared post-consent and would take account of information produced in the Peat Chapter to specify management techniques. The PMP would include details of expected peat excavation and re-use volumes based on recorded peat thickness, the infrastructure dimensions and anticipated re-use streams.

Assessment Methodology

11.15. The purpose of this assessment will be to:

- Define the peat extent, depth and properties across the Site;
- Identify any areas susceptible to peat slide, using peat thickness and digital terrain model (DTM) data to analyse slopes;
- Advise on the micrositing of turbines and tracks to areas of shallow or no peat;

- Assess potential effects on soils, peat and geology, and sensitive habitats; and
- Develop an acceptable code for construction that will adopt best practice procedures, effective management and control of onsite activities to reduce or offset any detrimental effects on the geology and soils including peat.

Stage 1 Peat Probing

11.16. No further Stage 1 peat probing will be undertaken prior to the design works and initial layout will be based on the peat mapping available from existing data.

Stage 2 Peat Probing

11.17. Following design freeze, the Stage 2 peat probing survey will be undertaken at 50 m centres from site infrastructure. Peat probing will also be undertaken at 10 m centres from each turbine location.

Peat Condition Assessment

11.18. During Stage 2 peat probing, a selection of core sample locations will be selected to provide a full peat depth profile. This will be achieved by taking 50 cm cores from the surface layer through to the basal layer. A record of each core will be kept and will include, but not be limited to the following information:

- Photograph of each core;
- Depth of acrotelm layer;
- Degree of humification;
- Course and fine fibre content;
- Water content; and
- Information on the water table and the average soil pH level.

11.19. This approach is consistent with the document Good Practice During Windfarm Construction[51] produced by Scottish Renewables, SNH, SEPA, FCS and HES.

Peat Slide Risk Assessment

11.20. Should significant quantities of peat be present within the Site, a Peat Slide Risk Assessment will be undertaken in accordance with Scottish Government guidance and Guidance on Developments on Peatland - Site Surveys[52] along with full consultation with the relevant consultees.

[51] Scottish Renewables, SNH, SEPA, FCS and HES (2015), Good Practice During Windfarm Construction. Available at: http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/good-practice-during-windfarm-const/ [Accessed on 08/02/2018]
[52] Scottish Government (2014) Guidance on Developments on Peatland - Site Surveys. Available at: http://www.gov.scot/Topics/Business-Industry/Energy/Energy-sources/19185/17852-1/CSavings/PSG2011 [Accessed on 08/02/2018]

11.21. The Peat Slide Risk Assessment will comprise of detailed analysis and reporting on the design freeze and will include a hazard and slope stability assessment and preliminary peat management recommendations.

11.22. In accordance with the Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments[53], hazards existing on Site will be ranked based on factors that influence stability; namely peat depth and slope gradient. In addition, the exposure of potential receptors to risk will be established and hazard rankings applied across the Site, with management and mitigation measures recommended for an acceptable construction.

Borrow Pit Assessment

11.23. Given the limitations on traffic movements to and from the Site, an onsite borrow pit to support the construction works is preferable. The presence of historical quarries on site indicate that this is a viable option. In order to confirm this, a Borrow Pit Assessment will be undertaken to understand the nature of the underlying rock geology and identify borrow pit areas for purposes of construction purposes.

[53] Scottish Government (2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments. Available at: http://www.gov.scot/Publications/2017/04/8868/0) [Accessed 08/02/2018]

HYDROLOGY AND HYDROGEOLOGY

12.1. The Site comprises a forestry plantation, with an undulating topography and there are isolated areas of peat in the southern and central parts of the Site. The Site rises from approximately 240 m above ordnance datum (AOD, approximately equivalent to sea level) along Stroanshalloch Burn (in the northern part of the Site) to 387 m at Loch Rig (in the western part of the Site). Lower areas of 240 m are also present in the south east part of the Site.

12.2. A site walkover was undertaken during 2013 to assess the hydrological receptors on site. An assessment of Private Water Supplies (PWS), including a site visit, was also undertaken in 2013 which identified a number of properties with the potential to be affected by the Development.

12.3. An updated hydrogeological survey will be undertaken in order to establish the whether the baseline conditions have changed since 2013 and assess the potential effects of the Development, significance and the potential for mitigation.

2013 Scoping Opinion

12.4. SEPA provided general advice in relation to the hydrological regime and construction good practice. Comments were received in relation to the hydrological assessment in 2013 as summarised below:

- Watercourse crossing must be detailed with supporting photographs;
- Details of any water abstraction required as part of the Development must be given;
- The flood risk must be identified; and
- An outline Construction Environmental Management Document was recommended to be included in the EIA Report.

12.5. The Council's Flood Management Team responded that the Site lies outwith the 1 in 200 year (0.5%) probability fluvial floodplain. Historical data showed flooding in the area in 2011. Further comments were provided on good practice management of runoff during construction.

12.6. Consideration of these points has been given in development of the assessment methodology.

Methodology

12.7. Further consultation, desk studies and data requests will be undertaken to inform the updated baseline for the assessment.

12.8. Hydrology and hydrogeology data will be obtained including, (but not limited to), the following aspects:

- Review of published data and maps;

- Consultation with the SEPA, the Council and the British Geology Survey;
- Identification of solid and surface geologies;
- Review of Pollution Prevention Guidelines;
- Identification of surface water features, catchments and GWDTEs;
- Collation of flood plain information, water quality data and groundwater vulnerability information; and
- Preparation of a catchment plan;
- Confirmation of data on public and private abstractions and supplies, and risk assessment of these; and
- Identification of other similar developments within 10 km to identify potential cumulative effects.

12.9. The EIA Report Chapter will present the assessment of potential effects on hydrology and hydrogeology resources, including:

- Details of consultation undertaken;
- Assessment methodologies;
- Hydrological walkover survey details and results;
- Assessment of the different phases of the Development to establish the effect on the hydrological resource;
- Identify mitigation measures, where necessary;
- Identify any residual effects following mitigation;
- Cumulative assessment with other developments within 10 km of the Development; and
- Statement of significance in accordance with the EIA Regulations.

12.10. A draft Water and Construction Management Plan (WCMP) will be included as an appendix to the Hydrology and Hydrogeology Chapter. The WCMP will detail recognised best practice methods to control effects on hydrology and hydrogeology and will form part of the overarching Construction Environmental Management Plan (CEMP).

Baseline Conditions

12.11. An initial review of the hydrological and ground conditions of the site has been undertaken. This section outlines the potential hydrological receptors which have been identified within the Site and its wider area.

Surface Water

12.12. The receptors which have been identified with on Site include several named and unnamed tributaries of Craigdarroch Water, namely Stroanshalloch Burn and Ballinnie Burn. One loch is located within the southwestern section of the Site, namely Stroanshalloch Loch. Craigdarroch Water is classified by SEPA as having a 'Good' ecological status under the WFD and is noted as a fisheries resource for salmon

under the Fresh Water Fish Directive. Troston Loch is located immediately southwest of the Site and feeds Black Water, which is classified by SEPA as having a 'Moderate' ecological status under the Water Framework Directive (WFD).

Statutory Designated Sites

12.13. There are no statutory designated sites in the area surrounding the Site which are potentially hydrologically connected.

GWDTEs

12.14. Should potential GWDTEs be identified through the ecological surveys, further consideration would be given to the hydrological function of these habitats to determine their actual dependency on groundwater.

Private and Public Water Supplies

12.15. A request will be made to the relevant statutory consultees for information pertaining to the location, type and source of public and PWSs to ensure that the information obtained in 2013 remains accurate.

Groundwater

12.16. The groundwater unit underlying the Site is identified as the New Galloway bedrock and localised sand and gravel aquifers', which is classified as having a 'Good' SEPA River Basin Management Plan (RBMP) quantitative and qualitative status.

Flood Risk

12.17. The Indicative River and Coastal Flood Map (Scotland) produced by SEPA shows the areas of Scotland with a 0.5 % (1:200) or greater chance of flooding. These areas are known as medium to high risk areas for flooding. Whilst every effort will be made to avoid locate Development infrastructure outwith areas of flooding, consideration will be given to ensuring the Development does not increase the risk of flooding elsewhere.

Key Sensitivities

12.18. At this stage, the main key sensitivities are considered to be named and unnamed tributaries of the Craigdarroch Water, groundwater, the hydrological function of GWDTEs and PWSs.

Key Questions for Consultees

12.19. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the consultees agree with the proposed methodology and scope of the hydrology and hydrogeology assessment?
- Do the consultees have any information that would be useful in the preparation of the hydrology and hydrogeology assessment?

NOISE

13.1. Sources of noise during operation of a wind turbine are mechanical (from machinery housed within the turbine nacelle) and aerodynamic (from the movement of the blades through the air). Modern turbines are designed to minimise mechanical noise emissions from the nacelle through isolation of mechanical components and acoustic insulation of the nacelle. Aerodynamic noise is controlled through the design of the blade tips and edges. In most modern wind turbines, aerodynamic noise is also restricted by control systems which actively regulate the pitch of the blades.

13.2. While noise from the wind turbines does increase with wind speed, at the same time ambient background noise (for example wind in trees) usually increases at a greater rate. Planning conditions are used to enforce compliance with specified limits.

2013 Scoping Opinion

13.3. Comments were provided by the Environmental Health Officer (EHO) at the Council on the proposed assessment; these included:

- The assessment should be undertaken in line with ETSU-R-97;
- The Development should consider whether the lower limits in ETSU-R-97 can be met; and
- A method statement should be produced for construction.

13.4. These points have been considered through subsequent consultation with the EHO and in refining the assessment methodology below.

Operational Noise

The Assessment and Rating of Noise from Wind Farms (ETSU-R-97)

13.5. The assessment methodology for operational noise is described in ETSU-R-97 'The Assessment and Rating of Noise from Windfarms'. The basic aim of ETSU-R-97 is to provide:

"Indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding unduly to the costs and administrative burdens on wind farm developers or local authorities".

13.6. The report makes it clear from the outset that any noise restrictions placed on a development must balance the environmental impacts of the development against the national and global benefits which would arise through the development of renewable energy sources.

13.7. The specific methodologies involved in applying ETSU-R-97 to the Development will be detailed in full in the EIA Report however, in summary, these provide recommendations for noise limits relating to the

existing levels of background noise for quiet day-time and night-time periods.

13.8. To carry out a noise assessment in accordance with ETSU-R-97, the following steps are required:

- Specify the number and locations of the wind turbines;
- Identify the locations of the nearest, or most noise sensitive, neighbours;
- Determine the background noise levels as a function of site wind speed at the nearest neighbours, or at least at a representative sample of the nearest neighbours;
- Determine the quiet day time and night time criterion curves from the background noise levels identified at the nearest neighbours;
- Specify the type and noise emission characteristics of the wind turbines proposed for the Development;
- Calculate the noise immission[54] levels due to the operation of the wind turbines as a function of site wind speed at the nearest neighbours; and
- Compare the calculated noise immission levels with the derived criterion curves and assess in the light of relevant planning requirements.

Good Practice Guide to the Application of ETSU-R-97 for Wind Turbine Noise Assessment

13.9. The Good Practice Guide (GPG)[55] was published by the Institute of Acoustics (IOA) in May 2013 (IOA, 2013). It presents current good practice in the application of the ETSU-R-97 assessment methodology for wind turbine developments at the various stages of the assessment, and has been endorsed by the Scottish Government as current industry good practice. It is accompanied by six Supplementary Guidance Notes (SGNs), which provide greater detail and examples of good practice in various aspects of the assessment process. The GPS and SGNs will be followed throughout the assessment.

Local Development Plan Supplementary Guidance: Part 1 Wind Energy Development: Development Management Considerations 2017[17].

13.10. Reference will also be made to the requirements in terms of noise contained within Dumfries and Galloway Council's ('the Council's') Supplementary Guidance Part 1 Wind Energy Development: Development Management Considerations adopted in 2017.

[54] 'Immission' refers to the noise at a receiver location, whereas 'emission' relates to noise produced by a source.
[55] Institute of Acoustics (IOA) (2013), A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise.

Baseline

13.11. A baseline noise survey was carried out at three properties from late November 2013 to early January 2014. These were:

- Auchenstroan to the north of the site;
- Minnygryle to the south of the site; and
- Troston to the south-east of the site.

13.12. The methodology for this survey was in accordance with the requirements of the GPG. The resulting data will be re-analysed to ensure that this aspect of the assessment is in accordance with SGN 2, which relates to data processing[56].

Cumulative Assessment

13.13. ETSU-R-97 and the GPG state that the noise limits that ETSU-R-97 recommends apply to the cumulative effect of noise from all wind turbines that may affect a particular location. A search will be undertaken in consultation with the Council to identify any wind energy developments either operational, consented or in planning which may also require consideration in the assessment process.

13.14. Cumulative noise levels will be established in line with the requirements of the GPG, and assessed against the ETSU-R-97 noise limits to determine the level of headroom present (i.e. the level of noise which may be generated by the Development, after taking all relevant cumulative developments into account).

13.15. Noise due to the Development will then be assessed against the remaining headroom to determine compliance with ETSU-R-97.

Low Frequency Noise and Infrasound

13.16. A study[57], published in 2006, by Hayes McKenzie on behalf of the DTI investigated low frequency noise from wind turbines. This study concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines. It also noted, however, that a phenomenon known as Aerodynamic Modulation was in some isolated circumstances occurring in ways not anticipated by ETSU-R-97.

13.17. In addition, Bowdler *et al*. (2009) concludes:

"...there is no robust evidence that low frequency noise (including 'infrasound') or ground-borne vibration from wind farms, generally has adverse effects on neighbours".

[56] Institute of Acoustics (IOA) (2014) Supplementary Guidance Note 2: Data Processing & Derivation of ETSU-R-97 Background Curves
[57] The Department for Trade and Industry, (2006). The measurement of low frequency noise at three UK windfarms. Hayes Mckenzie.

13.18. It is therefore not considered necessary to carry out specific assessments of low frequency noise or infrasound.

Amplitude Modulation

13.19. In its simplest form, Amplitude Modulation, by definition, is the regular variation in noise level of a given noise source. This variation (the modulation) occurs at a specific frequency, which, in the case of wind turbines, is defined by the rotational speed of the blades.

13.20. There is a distinction between 'normal' AM of wind turbine noise, characterised as blade swish and increased AM, typically referred to as Enhanced AM (EAM) or Other AM (OAM). It should be noted that ETSU-R-97 describes and makes allowance for normal AM or blade swish.

13.21. A study[58] was carried out in 2007 on behalf of the Department for Business, Enterprise and Regulatory Reform (BERR) by the University of Salford, which investigated the incidence of noise complaints associated with wind farms and whether these were associated with AM. This report defined AM as aerodynamic noise from wind turbines with a greater degree of fluctuation than normal at blade passing frequency. Its aims were to ascertain the prevalence of AM on UK wind farm sites, to try to gain a better understanding of the likely causes, and to establish whether further research into AM is required.

13.22. The study concluded that AM had occurred at only a small number (4 of 133) of wind farms in the UK, and only for between 7% and 15% of the time. It also stated that, the causes of OAM are not well understood and that prediction of the effect was not currently possible.

13.23. This research was updated in 2013 by an in-depth study undertaken by Renewable UK[59] which has identified that the generation of OAM is based upon the interaction of a number of factors, the combination and contributions of which are unique to each site. With the current state of knowledge, it is not possible to predict whether any particular site is more or less likely to give rise to OAM, and the incidence of OAM occurring at any particular site remains low, as identified in the University of Salford study. The report includes a sample planning condition to address AM, however that has not yet been validated or endorsed by Government.

13.24. In 2016, the IOA proposed a measurement technique[60] to quantify the level of AM present in any particular sample of wind farm noise. This technique is supported by the Department of Business, Energy & Industrial Strategy (BEIS, formerly The Department of Energy & Climate Change) who have published guidance[61], which follows on from the

[58] University of Salford (2007). 'Research into aerodynamic modulation of wind turbine noise'. Report by University of Salford, The Department for Business, Enterprise and Regulatory Reform, URN 07/1235, July 2007.
[59] Renewable UK (2013). 'Wind Turbine Amplitude Modulation: Research to improve understanding as to its Cause and effects', Renewable UK, 2013
[60] Institute of Acoustics, (2016) A Method for Rating Amplitude Modulation in Wind Turbine Noise,
[61] BEIS, (2016), Review of the evidence on the response to amplitude modulation from wind turbines

conclusions of the IOA study in order to define an appropriate assessment method for AM, including a penalty scheme and an outline planning condition. Notwithstanding this, the suggested outline planning condition remains in a draft form and would require site-specific legal advice on its appropriateness to a specific development. Section 7.2.1 of the GPG therefore remains current, stating: "*The evidence in relation to 'Excess' or 'Other' Amplitude Modulation (AM) is still developing. At the time of writing, current practice is not to assign a planning condition to deal with AM*"

13.25. It is therefore not considered necessary to carry out specific assessments of amplitude modulation.

Construction Noise

13.26. The following legislation and standards are of particular relevance to construction noise:

- The Control of Pollution Act 1974 (CoPA 1974);
- The Environmental Protection Act 1990 (EPA 1990); and
- BS 5228: 2009+a1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

13.27. CoPA 1974 provides local authorities in Scotland, England and Wales with powers to control noise and vibration from construction sites. Section 60 of CoPA 1974 enables a Local Authority to serve a notice to persons carrying out construction work of its requirements for the control of site noise. Section 61 of CoPA 1974 allows for those carrying out construction work to apply to the Local Authority in advance for consent to carry out the works.

13.28. The EPA 1990 specifies mandatory powers available to Local Authorities in respect of any noise that either constitutes or is likely to cause a statutory nuisance, which is also defined in the EPA 1990. A duty is imposed on Local Authorities to carry out inspection to identify statutory nuisances, and to serve abatement notices against these. Procedures are also specified with regards to complaints from persons affected by a statutory nuisance.

13.29. BS 5228 provides guidance on controlling noise and vibration from construction sites. It:

- Refers to the need for the protection against noise and vibration of persons living and working in the vicinity of and those working on construction sites;
- Recommends procedures for noise and vibration control in respect of construction operations; and
- Stresses the importance of community relations, stating that early establishment and maintenance of these relations throughout the carrying out of site operations will go some way towards allaying people's fears.

13.30. The acceptability of construction noise is likely to be affected by the location of the Site, relative to the noise sensitive premises; existing ambient noise levels; the duration and working hours of site operations; the characteristics of the noise produced and the attitude of local residents to the site operator. It is not always necessary to consider construction noise within the scope of an Environmental Assessment.

Key Questions for Consultees

13.31. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- What is the Council's view of noise limits for the scheme within the ETSU-R-97 daytime limit of 35 – 40 dB LA90, or the background noise + 5 dB whichever is the greater. Can a different limit be set for cumulative effects?
- Do the Consultees agree with the proposed method of assessment?
- Are the Consultees aware of any additional potential noise-sensitive receptors, such as new housing developments?
- Which other wind energy developments should be taken into consideration in the cumulative noise assessment?
- What are the Council's requirements for information on noise during construction?

TRAFFIC AND TRANSPORT

Introduction

14.1. The Traffic and Transportation Chapter will consider the effects of vehicle movements to and from the Site associated with construction, operation and decommissioning phases of the Development. Vehicle movements to the Site will likely consist of abnormal load vehicles (for the delivery of turbine components), heavy goods vehicles (HGVs), light goods vehicles and cars.

14.2. This Updated Scoping Report will outline the proposed methodology to be employed in the EIA for assessment of Traffic and Transportation effects on the chosen delivery routes and on the wider road network as required.

2013 Scoping Opinion

14.3. The following comments were received from the Council's traffic department in 2013:

- The A702 through Dunreggan/Moniaive is identified as an excluded route on the timber haulage Agreed Routes Map. The Council would not be in favour of any construction traffic accessing this proposed site from the east;
- There should be consultation with nearby forest managers and timber haulers through South of Scotland Timber Transport Officer to co-ordinate timber haulage operations during the construction period to minimise the cumulative impact on communities and road users;
- Temporary site access onto the B729 will require to be located, designed and constructed to the satisfaction of the Roads Authority in consultation with the Planning Authority and be subject to planning consent;
- The full extent of off-site road accommodation and mitigation, including passing place provision, widening etc, should be identified;
- The application should include details of proposed mitigation and a Traffic Management Plan to be agreed in writing with the Police and the Roads Authority prior to any works commencing on site; and
- A full breakdown of all expected vehicle movements by vehicle type and by month, including the haulage of all aggregate from outwith the site (if not sourced locally).

14.4. Transport Scotland commented that the Development was not likely to have a significant impact on the operation of the trunk road network.

14.5. Consideration of these points has been given when refining the methodology below.

Methodology

14.6. Assessment methodology will follow the 'Guidelines for the Environmental Impact of Road Traffic'. A screening process using two broad rules outlined in the aforementioned guidelines is used to identify the appropriate extent of the assessment area. These include:

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

14.7. Where the predicted increase in traffic flows is lower than the thresholds, the guidelines suggest the significance of effects can be stated to be low or not significant and further detailed assessments are not warranted. Peak traffic flows will be identified to assess a worst case scenario. Assessment of driver distraction will be undertaken as appropriate.

14.8. Traffic movements on the public roads resulting from construction, operation and decommissioning will be based on the Development design. Traffic generation will take into account the import of construction materials and the export of surplus materials; and the movement of equipment, construction plant and labour required during each phase of the Development.

14.9. Predicted traffic generation associated with any forestry clearance required to accommodate the Development will be included in the assessment. Only forestry clearance that deviates from ongoing forestry management activities will be considered (i.e. forestry traffic attributable to the Development).

14.10. Peak traffic flows will be identified to assess a worst case scenario. An assessment of effects on road safety, driver delay, pedestrian amenity, severance, noise and vibration will be undertaken as appropriate.

14.11. In addition to the aforementioned guidance, the Traffic and Transport Chapter will take into account the following statutory guidance documents published by the Scottish Government:

- SPP;
- PAN 75 – Planning for Transport; and
- Scottish Government Planning Specific Advice Sheet for Onshore Wind Turbines (last updated December 2013).

14.12. It should be noted that the above list may be subject to change in the case that various policies and guidance are replaced or updated during the delivery of the project.

14.13. As Transport Assessments (TA's) principally relate to developments that generate a significant permanent increase in traffic as a direct consequence of function, it is not proposed a formal TA will accompany the application, as wind farms are temporary in nature and the function will not result in a permanent increase.

Baseline Conditions

14.14. An initial study of the access route has been undertaken and has identified that the preferred strategic access route is likely to be from the Port of Ayr via A77, A713 and then the western end of the B729 from where access to the Site would be taken. The access route is shown on Figure 10, Appendix A. Further Abnormal Load Assessment work will be undertaken as part of the remaining EIA studies.

14.15. Baseline traffic flow conditions on routes within the vicinity of the Site will be established and detailed in the EIA. The geographic scope of baseline assessment will be confirmed in consultation with the Council and Transport Scotland as appropriate. This scope is expected to extend to all approach routes to the Site, except where justification for their omission can be demonstrated.

14.16. It is proposed that where publically available traffic count information is available (for example, that provided by the Department for Transport (DfT)), this shall be used for the baseline assessment. Where no such information is available, traffic surveys shall be conducted in accordance with best practice. It is anticipated that a combined research approach will be required (i.e. use of DfT information and primary traffic surveys).

Assessment of Effects

14.17. The findings of the access route study will be used to identify physical constraints and measures required for appropriate access to the Site.

14.18. The study would consider effects on:

- Road Users (delay and safety);
- Road Infrastructure (dilapidation); and
- Adjacent community/properties (safety and congestion).

14.19. Numerical analyses of delay through network or junction modelling is not to be required. The study would consider effects during construction, operation and decommissioning.

14.20. Assessing the sensitivity of receptors and magnitude of impacts is based on professional judgement. In terms of road networks, the sensitivity to change in traffic levels of any given road segment or junction is generally assessed by considering the residual capacity of the network under existing conditions. Where there is a high degree of residual capacity, the network may readily accept and absorb an increase in traffic and therefore, the sensitivity is considered low. Conversely, where existing traffic levels are high in comparison to the road capacity, there will be little spare capacity, and the sensitivity to any change in traffic levels would be considered as high.

14.21. The magnitude of the impacts will be determined through a review of the outline proposals for the Development; establishing the parameters of the road traffic that may cause an impact; and quantifying these effects.

14.22. To summarise, the study would involve:

- Consultation with the relevant roads authorities and emergency services (the Council, Transport Scotland, Police and FCS, *etc.*);
- Procurement of existing traffic data, and arranging additional surveys where necessary;
- Route inspections including detailed observations of communities potentially affected by the Development within the identified study area. The detailed and numeric assessment would be limited to the roads in close proximity to the Site, i.e. between the exit from the A77 and the Site entrance on the B729;
- Following a route inspections, sensitive receptors would be identified;
- In consultation with the Applicant and the relevant roads authorities, alternative route options would be identified;
- An initial assessment of traffic generation as a result of the Development would be undertaken. An initial assessment of effects will be based on professional judgement rather than transportation network modelling;
- Obtain refined project needs, refine traffic generation, and re-assess effects, using obtained baseline traffic data;
- Assessment of residual effects following the primary mitigation built in by virtue of the above-mentioned iteration, and any required residual mitigation needs; and
- Identify and assess the potential for cumulative effects based on other known developments in construction or in the planning process.

Key Questions

14.23. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the Consultees agree with the proposed method of assessment?
- Are the Consultees aware of any specific access restrictions or limitations on the proposed abnormal loads route?

AVIATION

2013 Scoping Opinion

15.1. General guidance comments were received from the Civil Aviation Authority, NATS or Defence Infrastructure Organisation (DIO) in the 2013 Scoping Opinion.

Assessment Criteria

15.2. Wind turbines have the potential to affect civil and military aviation operations. The assessment of effects of the Development will be based upon the guidance laid down in CAA Publication CAP 764 Policy and Guidelines on Wind Turbines, Version 6 dated February 2016. Consultation criteria for aviation stakeholders is defined in Chapter 4 of that document and the recommended distances include:

- Airfield with a surveillance radar – 30 km;
- Non radar licensed aerodrome with a runway of more than 1,100 m – 17 km;
- Non radar licensed aerodrome with a runway of less than 1,100 m – 5 km;
- Licensed aerodromes where the turbines would lie within airspace coincidental with any published Instrument Flight Procedure (IFP);
- Unlicensed aerodromes with runways of more than 800 m – 4 km;
- Unlicensed aerodromes with runways of less than 800 m – 3 km;
- Gliding sites – 10km; and
- Other aviation activity such as parachute sites and microlight sites within 3 km – in such instances developers are referred to appropriate organisations.

15.3. CAP 764 goes on to state that these distances are for guidance purposes only and do not represent ranges beyond which all wind turbine developments will be approved, or within which they will always be objected to. These ranges are intended as a prompt for further discussion between developers and aviation stakeholders and will be reported upon in the EIA Report.

15.4. It is necessary to take into account the aviation and air defence activities of the Ministry of Defence (MOD) as safeguarded by the DIO. The types of issues that will be addressed in the EIA Report include:

- MOD Airfields, both radar and non-radar equipped;
- MOD Air Defence Radars;
- MOD Meteorological Radars; and
- Military Low Flying.

15.5. It is necessary to take into account the possible effects of wind turbines upon the National Air Traffic Services En Route Ltd (NERL) communications, navigation and surveillance systems – a network of primary and secondary radars and navigation facilities around the country.

15.6. As well as examining the technical impact of wind turbines on Air Traffic Control (ATC) facilities, it is also necessary to consider the physical safeguarding of ATC operations using the criteria laid down in CAP 168 Licensing of Aerodromes to determine whether a proposed development will breach obstacle clearance criteria. This will also be reported on in the EIA Report, however initial surveys show there are no physical safeguarding issues associated with the Development.

15.7. Licenced Aerodromes - An initial review undertaken using the above criteria shows that there are no radar equipped aerodromes within 30 km of the site; Prestwick Airport is the nearest, approximately 50 km north-west of the northern section of the Site. Initial radar modelling indicates that neither the existing Primary Surveillance Radar (PSR) nor the newly installed Terma Scanter 4000 radar will be affected by the turbines as there is sufficient terrain screening. This will be confirmed in an assessment to be included in the EIA Report.

15.8. ATC Radars - the closest MOD ATC radar is at West Freugh, approximately 68 km to the south-west of the Site. Initial radar modelling indicates that the radar will be unaffected and in any case there is no operational requirement for the use of this radar in or near the location of the Development. The next closest ATC radars are those associated with the RAF Spadeadam range, over 90 km to the east of the Site. Initial radar modelling again indicates that the radars will be unaffected by the Development. This will be confirmed and reported in the EIA Report.

15.9. MOD Low Flying – The Site is located around 7 km west of Moniaive and just to the immediate south of the B729 and near Stroanshalloch and Troston Lochs. The Site sits atop Stroanshalloch Hill and the turbines will be set back from the B729/Stroanshalloch Burn valley between 250 and 2000 m. The B729 valley is a military low flying route that feeds the larger A713 (Glenkens, Loch Ken and Water of Ken) valley. This is an area where fast jet aircraft fly down to 100 ft. At that height, the aircraft can make use of much smaller valleys (B729) for cover than can be used by aircraft flying at the more normal 250 ft and 500 ft low flying heights.

15.10. Tactical Training Area 20 - The Site is in MOD Tactical Training Area 20 (TTA20). TTAs are highly valuable parts of the UK Low Flying System and are carefully monitored, managed and safeguarded by the MOD Low Flying Operations Squadron (LFOS) through DIO. To aid wind energy developers, LFOS publish a Low Flying/Wind Farm Safeguarding Map on the DECC Restats web-site (Moving to the RUK site). The Map is colour coded Red, Amber, Blue and Green in descending order of Low Flying importance. TTA20 is mostly coded Red and is in a Red area.

15.11. Local Area Low Flying Congestion - The Site is near the St John's Town of Dalry and New Galloway complex of villages and small towns. This is a MOD priority noise avoidance area and wind farm sites that increase the risk of military aircraft flying closer to the complex may raise concerns. In addition, the presence of existing sites (Wether Hill) and together with under construction and proposed sites (Blackcraig, Margree, Longburn & Quantans) will be a factor when LFOS assesses the site.

15.12. The Development has been known to DIO and LFOS for some years now, and consultation will be undertaken to identify concerns. Nonetheless, experience indicates that the Site has the potential to be successful dependent upon final turbine numbers and locations. MOD DIO consultation discussions will be reported in the EIA Report.

15.13. NATS En Route Ltd (NERL) – Initial radar modelling indicates that there are two NERL radars with low level coverage in this area, located at Lowther Hill and Great Dun Fell. In the case of Lowther Hill there is radar line of sight down to almost ground level across the site and all of the turbines are likely to be visible to the radar. This will require negotiation with NERL to resolve. In the case of Great Dun Fell, there is theoretical radar line of sight across the Site, however at a distance of over 115 km it is possible that the radar signal will have been sufficiently attenuated by the terrain so as to remove any technical or operational impact from the surveillance system. This will be addressed initially through the provision of a Technical and Operational Assessment (TOPA) provided by NERL and subsequent technical discussions, if required. The outcome of any assessments and discussions will be reported in the EIA Report. NERL have not previously objected to other sites in the vicinity that have a similar exposure to the Great Dun Fell radar.

15.14. Met Office Radars – The Met Office safeguards its network of radars using a European methodology known as OPERA. In general they will object to any turbine within 5 km in line of sight and will examine the impact of any turbines within 20 km. Where a site is within 20 km, the Met Office will undertake an operational assessment based on three main criteria, having determined that there is a technical impact on the radar. The factors they will consider include the following:

- Proximity to Airports;
- River catchment response times; and
- Population density.

15.15. In this case the closest Met Office radar is well beyond 20 km. It is expected that there will be no Met Office radar objection to this Development; this will be confirmed through consultation and reported in the EIA Report.

15.16. Consultation with relevant aviation providers is a routine part of wind farm development and in accordance with CAP 764 consultees will include:

- MOD DIO; and
- NERL.

15.17. A search for private airfields has been conducted and none were identified within consultation distance; however, not all private strips are listed in publications or marked on charts. Operators of any such private airstrips that are identified during EIA Report preparation will be consulted in accordance with CAP 764 CAP and CAP 793 Safe Operating Practices at Unlicensed Aerodromes.

EXISTING INFRASTRUCTURE

16.1. Wind farms have the potential to interfere with electro-magnetic signals passing above ground and physically with existing infrastructure below ground. This can therefore potentially affect television reception, fixed telecommunication links and other utilities. To identify any existing infrastructure constraints, a desk based study as well as consultation will be conducted. Consultation with relevant telecommunication and utilities providers is a routine part of wind farm development and consultees will include:

- Spectrum licensing/ OFCOM;
- Television and telecommunications providers as appropriate; and
- Water, gas and electricity utilities providers.

16.2. Other additional information obtained from consultation will be used to inform the future layout iterations.

2013 Scoping Opinion

16.3. No issues were highlight in the 2013 Scoping Opinion and the Applicant seeks confirmation that this remains the case.

SOCIO-ECONOMICS AND TOURISM

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

2013 Scoping Opinion

17.2. Responses were received from the Council Access Officer, Scotways and the British Horse Society in 2013:

- Scotways responded that no rights of way through the site were listed in National Catalogue of Rights of Way. They recommended consultation of Core Paths Plan;
- The Council Access Officer raised no objection.
- The British Horse Society provided guidance in relation to design, siting and access to minimise the potential for effect on horses and horse riders

17.3. The Applicant can confirm that these receptors will be considered in the EIA.

Relevant Guidance and Advice

17.4. There is no specific legislation or guidance available on the methods that should be used to assess the socio-economic impacts of a proposed onshore wind farm development. The proposed method has however been based on established best practice, including that used in UK Government and industry reports on the sector. In particular this assessment will draw from two studies by BiGGAR Economics on the UK onshore wind energy sector, a report published by RenewableUK and DECC in 2012 on the direct and wider economic benefits of the onshore wind sector to the UK economy (BiGGAR Economics, 2012) and a subsequent update to this report published by Renewable UK in 2015 (BiGGAR Economics, 2015). These reports will provide the input assumptions if the data for the Development is not available.

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

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

- Scotland's Economic Strategy;
- Dumfries and Galloway Regional Economic Strategy;

- Tourism Scotland 2020; and
- Dumfries and Galloway Regional Tourism Strategy 2016 - 2020.

Summary of Baseline Environment

17.7. The assessment will include a description of the current socio-economic baseline within the local area. This will include a summary of economic performance data for each study area and a description of the relevant tourism assets that will be considered in the assessment.

17.8. The baseline environment will cover and compare three study areas, namely:

- Local Area, comprising of electoral wards that cover the location of the Development and nearest settlements;
- Dumfries and Galloway Council Area; and
- Scotland.

17.9. The economic impacts will be quantified for Dumfries and Galloway Council Area and Scotland.

17.10. The socio-economic baseline will cover:

- The demographic profile of the local area within the context of the regional and national demographic trends;
- Employment and economic activity in the local area, within the context of the regional and national economic trends;
- The industrial structure of the local area within the context of the regional and national economies;
- The role of the tourism sector in the local and regional economy; and
- Wage levels within the local economy compared to regional and national levels.

Key Issues for Consideration in the EIA Report

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

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

- Temporary effects on the regional and/or national economy due to expenditure during the construction phase;
- Permanent effects on the regional and/or national economy due to expenditure associated with the on-going operation and maintenance of the Development;

- Permanent effects on the local economy as a result of any additional public expenditure that could be supported by the additional tax revenue that would be generated by the Development during the operational phase;
- Permanent effects on the local economy that could be supported by any community benefit funding that might be provided by the Applicant during the operational phase; and
- Temporary effects on the regional and/or national economy due to expenditure during the decommissioning phase.

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

17.14. Nevertheless, the tourism sector is an important contributor to the local and Scottish economies; therefore there is merit in considering whether the Development will have any effect on the tourism sector. This assessment will consider the potential effect that the Development could have on tourism attractions, routes, trails and local accommodation providers, such as:

- Galloway Forest Park; and
- the Southern Upland Way.

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

17.16. Other issues, such as implications for the agricultural sector, may emerge during the assessment that will require consideration.

17.17. Effects will be considered based on the guidance from Guidelines for Environmental Impact Assessment and a Handbook for EIA.

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

- Introduction including scope of assessment and methodology;
- Economic development and tourism strategic context;
- Baseline socio-economic context;
- Baseline tourism context;
- Socio-economic assessment;
- Tourism impact assessment;
- Proposed measures and actions to maximise local economic and community impacts;

- Proposed measures and actions to mitigate any harmful effects (if required); and
- Summary of findings and conclusions.

17.19. This will be a desk-based study and therefore there will be no stakeholder consultations undertaken as part of this study.

Key Issues for Consultees

17.20. The following questions have been designed to ensure that the proposed methodologies and assessment are carried out in a robust manner and to the satisfaction of the determining authorities:

- Do the Consultees agree with the proposed method of assessment?
- What additional wind energy developments are under consideration in the area that have a similar development timeframe?
- Are the Consultees aware of any additional sensitive economic activities in the area that would not be covered in the proposed method of assessment?

SHADOW FLICKER AND REFLECTIVITY

Introduction

18.1. Reflectivity is the potential for the sun to 'glint' off structures which, in the case of wind turbines, can be an intermittent glint when the turbines are rotating. This effect can be minimised by selecting a matt coating for the wind turbines, designed to reduce the potential for reflection and is therefore scoped out of further assessment.

18.2. Under certain combinations of geographical position and time of day, the sun may pass behind the rotors of a wind turbine and cast a shadow over neighbouring properties. Shadow flicker is an effect that can occur when the shadow of a blade passes over a small opening (such as window), briefly reducing the intensity of light within the room, and causing a flickering to be perceived. Shadow flicker effects only occur inside buildings where the blade casts a shadow across an entire window opening.

Methodology

18.3. Due to the lack of explicit guidance in Scotland, guidance within England is considered to be material for assessing shadow flicker effects. Guidance produced by the UK Government, Planning Practice Guidance for Renewable and Low Carbon Energy[62] states that "*only properties within 130 degrees either side of north, relative to the turbines can be affected at these latitudes in the UK- turbines do not cast long shadows on their southern side*". In addition, the Scottish Government Online Planning Guidance note on onshore wind[12] provides information on shadow flicker. It states: "*Where separation is provided between turbines and nearby dwellings (as a general rule 10 rotor diameters), "shadow flicker" should not be a problem*".

18.4. An assessment will be undertaken to determine whether or not there will be any shadow flicker effects properties surrounding the Site. This assessment will examine all properties which lie within 10 rotor diameters and 130° either side of north from each turbine. Effects will be quantified using a computer model during the EIA process and mitigation, if required, will be outlined.

[62] DCLG (2013). Planning Practice Guidance for Renewable and Low Carbon Energy. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225689/Planning_Practice_Guidance_for_Renewable_and_Low_Carbon_Energy.pdf [Accessed 01/03/2018]

CLIMATE CHANGE AND CARBON BALANCE

Introduction

19.1. The aim of the Climate Change Impact Assessment (CCIA) is to determine how the Development is likely to interact with a changing climate and whether any significant effects could arise. CCIA one of the new assessment topics which must be given consideration as specified within the EIA Regulations.

19.2. The purpose of the Development will be to produce electricity from a renewable source, the wind, thereby displacing carbon dioxide (CO_2) and other GHG emissions that would occur through the production of the equivalent amount of electricity from fossil fuel sources. The EIA will consider the current electricity generation mix and assess the level of CO_2 savings that could potentially be made depending on the source of electricity generation the wind farm is displacing at any given time.

19.3. CO_2 emissions can also be generated from the degradation of peatland should a wind farm be constructed in peatland habitat, as peat based soils can act as carbon sinks or carbon sources depending on how they are managed. Given that peat is present on the Site, the potential effects associated with construction on peatland would be considered as part of this chapter.

Methodology

19.4. As CCIA is a new category of assessment currently only provisional guidelines exist to standardise the process in the UK. IEMA published Environmental Impact Assessment Guide to Climate Change Resilience and Adaption[63] in November 2015 with the intention of providing an update once the directive was transposed. As of early 2018, this guidance has not yet been published. Accordingly, the proposed CCIA methodology is developed in line with the 2015 IEMA guidance and the text of the EU Directive and EC guidance in order to establish a comprehensive assessment methodology.

19.5. The proposed methodology focuses on the following elements:

- Assessment of the Development's effects on climate change (calculation of carbon footprint based on best practice guidelines, e.g. Scottish Government Carbon Calculator Tool[64]) to include calculation of GHG emissions relating to construction, operation, decommissioning and the production of electricity;

[63] IEMA (2015) Environmental Impact Assessment Guide to Climate Change Resilience and Adaption. Available at: https://www.iema.net/assets/templates/documents/iema_guidance_documents_eia_climate_change_resilience_and_adaptation%20(1).pdf [Accessed 01/03/2018]
[64] Scottish Government (2018) Carbon Calculator Toll v1.4.0. Available at: https://informatics.sepa.org.uk/CarbonCalculator/index.jsp [Accessed 06/02/18]

- Assessment of the Development's vulnerabilities and resilience in the context of climate change by identifying appropriate climate change projections and climate change effects; and
- Assessment of the Development's effects upon identified environmental receptors in the context of the emerging baseline.

Baseline and Potential Effects

19.6. The most recent climate change projection iteration, UKCP09, has identified the following trends as a result of climate change:

- Increased temperature;
- Changes in the frequency, intensity and distribution of rainfall events (e.g. an increase in the contribution to winter rainfall from heavy precipitation events and decreases in summer rainfall);
- Increased windstorms; and
- Sea level rise.

19.7. The UK Climate Projections 18 (UKCP18) project will build upon the UKCP09 projections. Due to be released in May 2018, academics and other researchers will use the core set of UKCP18 data to support the next Climate Change Risk Assessment.

19.8. The Development will be inherently designed to reduce adverse climate change effects by offsetting the production of carbon dioxide through use of renewable sources for generating electricity. The current baseline with respect to GHG emissions from existing methods of electricity generation will be identified using existing data from the Government, operational sites, and experience of other similar developments. This information will provide the baseline information against which to assess the contribution of the Development to reducing greenhouse gas emissions and potential for significant effects.

19.9. It is proposed that the assessment of the Development's effects on climate change will be scoped into the EIA, given the associated carbon reduction properties of wind farms and the need for felling and potential for peat disturbance.

MAJOR ACCIDENTS AND DISASTERS

Introduction

20.1. The EIA Regulations state than an EIA must identify, describe and assess in an appropriate manner, the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and natural disasters.

Assessment

20.2. Relevant information available and obtained through risk assessments pursuant to legislation of the European Union such as Directive 2012/18/EU of the European Parliament[65] on the control of major-accident hazards involve dangerous substances. The Directive lays down rules for the prevention of major accidents which might result from certain industrial activities and the limitation of their consequences for human health and the environment. Directive 2012/18/EU requires the preparation of emergency plans and response measures which will be covered under equivalent documents relevant to the nature of the Development. Throughout all phases of the Development, cognisance should be made of the following guidance documents produced by Renewable UK:

- Wind Turbine Safety Rules Third Edition[66];
- Guidance & Supporting Procedures on the Application of Wind Turbine Safety Rules Third Edition[67]; and
- Onshore Wind Health & Safety Guidelines[68].

20.3. Health and Safety during the construction and decommissioning phases of the Development will be subject to relevant legislation and best practice. This will involve site inductions, risk assessment and method statements as implements by the Construction Management Plan (CMP). Therefore there is no further requirement for Health and Safety to be assessed within the EIA and is scoped out of further assessment.

20.4. The risk of a major accident could be increased by the probability of natural disasters associated with the location of the Development. This should be considered during the preparation of major-accident scenarios.

[65] European Union (2012) Directive 2012/18/EU. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0018&from=en [Accessed 06/02/18]
[66] Renewable UK (2015) Wind Turbine Safety Rules, Third Edition. Available at: https://c.ymcdn.com/sites/www.renewableuk.com/resource/resmgr/Docs/Health_&_Safety/WindTurbineSafetyRulesIssue3.pdf [Accessed 06/02/2018]
[67] Renewable UK (2015) Guidance & Supporting Procedures on the Application of Wind Turbine Safety Rules, Third Edition. Available at: https://c.ymcdn.com/sites/www.renewableuk.com/resource/collection/AE19ECA8-5B2B-4AB5-96C7-ECF3F0462F75/Wind-turbine-safety-rules-guidance.pdf [Accessed 06/02/2018]
[68] Renewable UK (2015) Onshore Wind Health & Safety Guidelines. Available at: http://c.ymcdn.com/sites/www.renewableuk.com/resource/collection/AE19ECA8-5B2B-4AB5-96C7-ECF3F0462F75/OnshoreWind_HealthSafety_Guidelines.pdf [Accessed 06/02/2018]

20.5. The Development is not located within an area known for natural disasters such as floods, hurricanes, tornadoes, volcanic eruptions, earthquakes or tsunamis. At >240 m AOD and >30 km from the coast, the Development is not at risk from tsunamis and there are no known volcanoes are nearby. As the most probable of natural disasters to effect the Development, flood risk will be assessed within the hydrological assessment in the ER. It is noted that the Development is not located in an area of flood risk.

20.6. As stated in the CCIA Chapter, none of the identified climate change trends listed will affect the Development with the exception of increased windstorms. Brake mechanisms installed on turbines allow them to be operated only under specific wind speeds and should severe windstorms be experienced then the turbines would be shut down. Although an unlikely event in the area, the brake mechanism could also apply to a hurricane scenario.

20.7. Whilst unlikely to occur in Scotland, ice throw is a phenomenon which can occur when ice, which builds up on the blades, is dislodged when the blades begin to turn. Modern turbines are fitting with sensors which can shut the turbine down during icy conditions to prevent ice throw, thereby negating the need for concern.

20.8. Appropriate health and safety protocol will be implemented to minimise the occurrence of any major accidents. Infrastructure will be placed outwith flood zones to mitigate likelihood of flooding and breaking mechanisms installed to allow shut down of the turbines during severe windstorms. Although it is difficult to plan for natural disasters such as earthquakes or tornados, the Development is not located in an area prone to such disasters and the likelihood of such an event is extremely rare. Therefore, it is concluded that no significant effects will arise due to major accidents and natural disasters as a result of the Development, and this topic can be scoped out of the EIA.

CUMULATIVE EFFECTS

21.1. At the time of writing it is known that there are other operational wind farms and a number of wind energy proposals in the region. The methodology adopted for assessing the cumulative effects of wind energy developments will be in accordance with advice from SNH and the Scottish Government. Cumulative effects, which are the combined effects of two or more wind energy developments, will be considered for each technical area assessed within the EIA Report.

21.2. The extent of any cumulative assessment relative to each technical assessment will be agreed during the consultation process and can include both existing and proposed wind farm developments and other forms of development. The potential landscape and visual effects, for example, which relate to the indivisibility of an individual wind farm development scheme, will be much more wide ranging than noise effects which will be limited to receptors in the more immediate vicinity of the Development.

21.3. In relation to some of the technical assessments, specific guidance and policy exists advising that effects associated with existing wind farm developments should be considered cumulatively.

21.4. An initial list of cumulative sites located within 35 km of the Site is located in Appendix C.

CONSULTATION

22.1. The process of identifying environmental effects is both iterative and cyclical, running in tandem with the iterative design process. Consultation forms an integral role throughout the EIA process.

Scoping Consultation

22.2. Infinergy is fully committed to a thorough engagement process aiming to ensure that communities are consulted and informed of developments during, and beyond, the EIA process on all projects. This is achieved by a variety of methods as appropriate including public exhibitions, meetings and circulars. Public consultation will be incorporated into the iterative design process and recorded in appropriate sections of the EIA Report. Planning Advice Note (PAN) 81 on Community Engagement provides advice on how communities should be properly engaged in the planning process and forms a basis for potential activities.

22.3. Comments are specifically invited on:

- The proposed content of the EIA Report;
- Assessment methods;
- Additional data sources; and
- Additional consultees.

22.4. In terms of the proposed content of the EIA Report it should be emphasised that one of the aims of this scoping report is to scope out any issues which are known not to be significant from further consideration and to highlight and focus on the main issues which should be assessed within the EIA Report.

Public Consultation

22.5. It is hoped that a positive relationship can be maintained with local community members. Initial community open days were held in July 2013.

22.6. As part of the consultation process, the Applicant will engage with the local community in order to inform local people about the proposals, to explain the development and its likely effects and to take on board any concerns or issues.

22.7. The following further pre-application community involvement activity is proposed:

- Information, such as a development brief to be included on Infinergy's website (http://www.infinergy.co.uk) in relation to the project;
- Written consultation to Councillors and the Chair of the relevant committee to include information about the project along with a summary of public consultation to be carried out;

- Placement of an advert in local paper(s) announcing the project with reference to Infinergy's website for further information and including information on public exhibitions; and
- Public exhibitions – Infinergy will closely assess the consultation zone and will then decide on the location and timing of a public exhibition.

22.8. The EIA Report will include a summary of all pre-application public consultation carried out.

APPENDIX A – FIGURES

APPENDIX B – 2013 SCOPING OPINION

Your Ref:

Our Ref: 13/E/3/0005 & 13/F/3/0068

3 June 2013

Andrew Mott
Arcus Consultancy Services
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YO1 8AJ

Planning and Environment Services
Development Management
Kirkbank
English Street
Dumfries
DG1 2HS

Any enquiries please contact

Patrick Hanna

Telephone – 01387 260819

Mobile – 07919 300785
E-mail – patrick.hanna@dumgal.gov.uk
Website – www.dumgal.gov.uk/planning

Dear Sir

Environmental Impact Assessment (Scotland) Regulations 2011
(A) REQUEST FOR SCREENING & SCOPING OPINION UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011 FOR THE ERECTION OF A WIND FARM UP TO 16 WIND TURBINES (146.5 METRES HIGH TO BLADE TIP) (13/E/3/0005)
(B) PRE-APPLICATION ENQUIRY FOR THE ERECTION OF A WIND FARM UP TO 16 WIND TURBINES (146.5 METRES HIGH TO BLADE TIP) (13/F/3/0068)
AT STROANSHALLOCH, MONIAIVE

I refer to the above scoping request and pre-application enquiry.

Please find enclosed a copy of the Council's formal Scoping Opinion in respect of the above Regulations.

This letter and accompanying documents also comprises the Council's response to pre-application enquiry. As the proposal would constitute a major development, in terms of the The Town and Country Planning (Hierarchy of Development) (Scotland) Regulations 2009, this service promotes the use of a processing agreement / project plan. This would normally set out the following:-

- the decision making framework, including a target determination date and potential risks,
- roles and responsibilities of the Council, and the applicant / agent,
- identify any need for, and timescale, for any planning obligation,
- a timetable for processing the application and the post-application stages,
- what information should be provided, and when it should be provided, and
- the consultations that will be undertaken.

It is requested that the processing agreement / project plan be approached in a positive and collaborative manner. Should you wish to enter such an agreement with the Council, please contact this office at an early opportunity.

You will appreciate that this correspondence constitutes advice only and is made without prejudice to any decision which the Council as planning authority may choose to make in respect of any future planning application. Furthermore, it should not be assumed that every issue which might impact on any such application has been addressed. It should also be noted that other issues may come to light as a result of consultation with other relevant bodies in relation to any future planning application.

Yours sincerely

Janice Kay

Janice Kay
Area Planning Manager

DUMFRIES AND GALLOWAY COUNCIL

Environmental Impact Assessment (Scotland) Regulations 2011

Scoping Opinion in respect of 16 no. wind turbines (up to 146.5m to tip) at Stroanshalloch, Moniaive, Dumfries

1.0 The scoping request from Infinergy relates to the erection of up to 16 no. wind turbines with a maximum ground to tip height of 146.5m and a generating capacity of up to 48MW at Stroanshalloch, Moniaive, Dumfries.

2.0 Any wind farm development would be required to be considered against Structure Plan policies S21 and S22 and the Wind Energy Diagram (Structure Plan Technical Paper No. 5) referred to in policy S22, as well as relevant General Policies of the Nithsdale Local Plan. Interim Planning Policy: Wind Energy Development (IPP) is the Council's latest statement of policy with regards to wind energy development, and is a material consideration for all such development. It intends to replace the Wind Energy Diagram and Technical Paper No.5, but does not replace any development plan policies. Notwithstanding, the methodology of Policy S22 is now considered to be outdated because it does not comply with SPPs requirement for planning authorities to set out a spatial framework for wind energy development identifying areas of protection, areas of constraint, and areas of search. The methodology undertaken by IPP does meet these requirements and, as a consequence, is considered to outweigh Policy S22.

3.0 Dumfries and Galloway Council have received consultation responses from Historic Scotland, Scottish Natural Heritage, Transport Scotland, SEPA and RSPB. Copies of these consultation responses are attached as an Appendix to this report and are self-explanatory.

4.0 The Council has also received correspondence from a number of third parties relating specifically to the scoping report. Whilst not a formal part of this Scoping Opinion, I can confirm that these comments are available for the developer to view online at http://eaccess.dumgal.gov.uk/online-applications/.

5.0 The following comments have been received from the Council's internal consultees. You will appreciate that this Scoping Opinion constitutes advice only and is made without prejudice to any decision which the Council as planning authority may choose to make in respect of any future planning application. Furthermore, it should not be assumed that every issue which might impact on any such application has been addressed in this letter. It should also be noted that other issues may come to light as a result of

consultation with other relevant bodies in relation to any future planning application.

6.0 Archaeologist

6.1 It is confirmed that there is potential for a proposal of this nature at this location to have significant impact on historic environment assets and therefore potential effects will need to be assessed in the environmental impact assessment. Both direct and indirect effects will need to be assessed.

6.2 Interim Planning Policy: Wind Energy Development. The applicant should be aware of the Interim Planning Policy: Wind Energy Development, adopted February 2012. This is supported by a technical study; the Dumfries and Galloway Wind Farm Landscape Capacity Study (DGWFLCS). It is noted that the proposal does not fall into a search area for turbines over 50 metres. It is advised that the landscape capacity study considered 'Settlement and Archaeology' as one of the landscape sensitivities informing the landscape capacity study and the resulting spatial framework. The following is an extract from Appendix B: assessment methodology that describes how this has been applied to inform the overall sensitivity category of the landscape character area:

Settlement and Archaeology. Large/medium wind farms, turbines greater than 50m to blade tip.

Consideration of the pattern, scale and character of settlement and its relationship to the landscape. Assessment of how development might impinge on these characteristics; where there may be scope to attain some visual separation to avoid adverse scale contrasts and minimise effects on settlement setting. Where larger scale industrial buildings are present, the scale relationships between turbines and these is also considered. Archaeological features are considered in respect of their contribution to landscape character and any potential effects on setting.

In this case, the proposal falls into Landscape Character Type: Foothills with Forest, Stroan unit. The Settlement and Archaeology sensitivity rating is Medium for turbines over 80m in height.

The specific advice given in the DGWFLCS must be considered and assessed in progressing any proposal. In addition, Section 7 of Interim Planning Policy: Wind Energy Development contains guidance on Historic Environment and Cultural Heritage for all proposals, that must be considered.

6.3 Direct effects may occur within or around the proposal site where development activity will take place. Assessment of these effects should be informed by a thorough desk based study. The Council Historic Environment Record identifies a number of undesignated features within the proposal area. As the area is afforested there is no requirement to carry out a full ground survey, but known sites should be visited to check on condition and extent. The results of should be submitted to the Council in a format suitable for importation to the Council Records. (Contact Historic Environment Record Officer, see below).

6.4 Indirect Effects. Generally, impacts on the setting of significant historic environment assets, should be lead by the Zone of Theoretical Visibility (ZTV), with the greatest effects likely to be experienced by sites of national, (note not all are designated), or greater significance closest to the site. It is usual for effects on features of national or greater significance to be assessed out to 10km. Analysis of the historic environment features in relation to the ZTV should be undertaken, before a finalised list of wire lines /photomontages illustrating the effects on the setting of features is agreed with Council Archaeologist. In addition to the features noted in Tables 9.1 and 9.2, the applicant should assess effects on the 'Archaeologically Sensitive Areas' that have been designated by the Council at:

• Stroanfreggan (6.5 km to west)
• Barennoch to Garryhorn (13km to west)

These both are both based on Heritage trails, now identified as Core Paths, promoted by the Carsphairn Heritage Group. See : http://www.dumgal.gov.uk/CHttpHandler.ashx?id=11778&p=0

6.5 Key policy statements that have been issued by Scottish Government in relation to the historic environment are:

• Scottish Historic Environment Policy.
• Scottish Planning Policy, paragraphs 110 -124 on Historic Environment, and 182-191 on Renewable Energy, February 2010.
• Managing Change in the Historic Environment: Setting, Historic Scotland October 2010.
• Planning Advice Note 2/2011 Planning and Archaeology

In addition to national policy the relevant Council policies covering the historic environment in this case are:

• Structure Plan policy E8: Conservation Areas
• Structure Plan Policy E9: Listed Buildings
• Structure Plan Policy E11: Historic Gardens and designed Landscapes
• Structure Plan Policy E12: Development Affecting Archaeological Site
• Structure Plan Policy E13: Archaeologically Sensitive Areas

6.6 Historic Environment Record. Information on features recorded in the Council Historic Environmental Record, including listed buildings, designed landscapes, and Archaeologically Sensitive Areas can be obtained from the Historic Environmental Record Officer (Andrew Nicholson), Planning and Environment, Militia House, English Street, Dumfries, DG1 2HR. Tel: 01387 260 154. In line with Council Policy there will be a charge to cover the costs of the time taken. This can be supplied in GIS and database format to facilitate integration with other data, particularly the ZTV.

7.0 Flood Risk Management

7.1 The area proposed for development lies outwith 1 in 200 year (0.5% probability) fluvial floodplain as detailed on DGi (information from SEPA). There is historical data showing flooding in this area in 2011, however the site appears to be Greenfield. The developer needs to manage surface runoff from the site. Runoff should mimic that of existing conditions and not be increased.

The developer should not increase the rate of runoff into The Water of Ballinnie Burn which runs through the South of the site from West to East or the Stroanshalloch Burn which runs from West to East along the North boundary of the site. Any significant increase may increase the flood risk downstream. The developer should submit the EIA for review. EIA to include the measures in place to deal with the pluvial flows during construction and when the development is completed.

8.0 Biodiversity Officer

8.1 Generally content with the scope of the proposed ecological and ornithological surveys, evaluation and impact assessments. The proposal to carry out an Extended Phase 1 Survey of habitats in the development site and adjacent areas would be welcomed. In addition to any sites identified for national importance, such as ancient woodland, the survey should identify and evaluate habitats of local importance, as identified as Local Priority Habitats in the Dumfries and Galloway Local Biodiversity Action Plan (2009). Similarly, ornithological and species surveys should, in addition to statutory protected species and species of national importance, identify and evaluate species of local importance, as identified as Local Priority Habitats in the Dumfries and Galloway Local Biodiversity Action Plan. Proposals should, wherever possible, contribute to the aims and objectives of the Dumfries and Galloway Local Biodiversity Action Plan through mitigation and enhancement plans.

9.0 Development Team Leader (Nithsdale Roads)

9.1 It is noted that the Scoping Report identifies that:-

• (para 3.2) the turbines might typically have a maximum tip height of 146.5m.
• (para 3.7) an abnormal load assessment will be undertaken to demonstrate the availability of a suitable route.
• (para 3.8) turbine component delivery could be delivered to site from Ayr via the B729
• (para 3.8) the traffic assessment would determine the requirements for upgrading of junctions or minor roads and would include swept path tracking.
• (para 3.20) stone will be extracted from on-site borrow pits if available else imported to site from elsewhere.
• (para 3.22) the grid connection will fall under a separate planning application and will be subject to a separate environmental investigation.
• (para 12.7) in assessing traffic effects an access route study will consider the physical constraints and measures required for access.
• (para 12.9) the study will consider effects on Road Uses, Road Infrastructure and Adjacent communities/properties.

9.2 The following observations are offered:-

• East of the proposed site, the village of Moniaive is located on the A702 at the junction with the B729. This village is characterised by narrow streets that have locally poor horizontal alignment, locally restricted forward visibility, restricted width and have restricted passing opportunities. On the timber haulage Agreed Routes Map the A702 through Dunreggan/Moniaive is identified as an excluded route. The roads service would not be in favour of

any construction traffic accessing this proposed site from the east.
• The Traffic Management Plan for development of the nearby Wether Hill wind farm (03/P/30746) specifically identified that all construction traffic should access the site from the west via the A713 to Carsphairn and onto the B729 to the site entrance. Whilst the Scoping Report indicates that access is still being considered, any future Environmental Statement or application for this site should reflect this access restriction.
• There should be consultation with nearby forest managers and timber hauliers through the office of South of Scotland Timber Transport Officer to co-ordinate timber haulage operations during the construction period to minimise the cumulative impact on communities and road users.
• The formation of a temporary site access onto the B729 will require to be located, designed and constructed to the satisfaction of the Roads Authority in consultation with the Planning Authority and be subject to planning consent.
• Any future Environmental Statement or application should identify the full extent of off-site road accommodation and mitigation works including passing place provision, carriageway strengthening, widening and alterations to road boundaries all along any proposed access routes necessary to permit construction traffic and the passage of component delivery vehicles (a separate planning consent may be required in respect of these works).
• Any future Environmental Statement or application should include details of proposed mitigation measures to include agreed access route, details of measures that will be implemented to ensure that no stacking of delivery vehicles occur on any part of the public road network and a Traffic Management Plan to be prepared by the applicant (and to be agreed in writing with the Police and the Roads Authority prior to works commencing on site).
• To permit an assessment of the impact of this proposal, any future Environmental Statement or application should include a full breakdown of all expected vehicle movements by vehicle type and by month and this should include the haulage of all aggregate from outwith the site (in the event that suitable borrow pits are not found to be available locally).
• The developer will be held responsible for the immediate execution of any repairs and will be required to meet the cost of above average maintenance to the public road network arising from the concentration of heavy traffic associated with this development.
• The installation of the grid connection will have an impact upon public roads where the route follows a road, crosses a road or crosses a bridge on the road.
• Where an access route crosses bridges and culverts, the applicant will require to get approvals (in respect of those structures) from the Council's DGDesign Bridges and Structures Unit.

10.0 Landscape Architect

10.1 No comment at this stage. The Landscape Architecture Service can be contacted at Landscape Architecture Service, Planning and Environment, Newall Terrace, Dumfries, DG1 1LW, tel. 01387 260149. Notwithstanding a list of recommended viewpoints has been provided, in correspondence dated 29 April 2013, a copy of which is attached.

APPENDIX

Consultation responses have been received from the following agencies and services, whose comments are attached and are self explanatory:-

- Historic Scotland
- Scottish Natural Heritage
- Transport Scotland
- SEPA
- RSPB
- Dumfries & Galloway Council Landscape Architecture Service (list of viewpoints)

HISTORIC SCOTLAND
ALBA AOSMHOR

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Direct Line: 0131 668 8729
Direct Fax: 0131 668 8722
Switchboard: 0131 668 8600
Urszula.Szupszynska@scotland.gsi.gov.uk

Our ref: AMN/16/D
Our Case ID: 201300355
Your ref: 3/E/3/0005

01 May 2013

Mr Patrick Hanna
Planning and Environment Services
Dumfries & Gallow Council
Kirkbank
English Street
DUMFRIES
DG1 2HS

By email: patrick.hanna@dumgal.gov.uk
pe.nithsdale.planning@dumgal.gov.uk

Dear Mr Hanna

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011
Erection of a Wind Farm up to 16 Wind Turbines at Stroanshalloch, Moniaive (Screening/ Scoping Opinion)

Thank you for your consultation letter seeking our views on the above development. We received it via the Scottish Government's planning decisions division for our role as a consultee through the Scottish Ministers under the terms of the above regulations.

This letter covers our comments for our statutory historic environment remit, that is scheduled monuments and their setting, category A-listed buildings and their setting, gardens and designed landscapes (GDL) and historic battlefields included in their respective Inventories.

Information and advice on the historic environment issues, including unscheduled archaeology, should be sought from your Council's archaeological services. Your Council's conservation advisors will be able to provide information and advice on likely impacts on category B and C(S) listed buildings and conservation areas.

Proposed Development

The Development proposal comprises up to 16 wind turbines to a maximum height of 146.5m to be erected at Stroanshalloch, Moniaive.

Historic Scotland's Scoping View

Without prejudice and on the basis of the information supplied, we can indicate at this stage that the proposal of this nature and scale may pose significant impacts on the setting of some nationally important heritage assets located in the vicinity. We recognise that the submitted scoping report correctly identifies these sites (p.44 and

45) and confirm that particular attention should be given to assessing the magnitude of potential impacts on the following assets:

Craigdarroch House (HB Num 10340)
This is an important classical country house, built in 1729 by William Adam. It is situated in a steep-sided valley and the enclosing hills are an important element of its setting. It is located *c.* 2.5 km to the east of the site boundary. We would recommend that a detailed assessment is undertaken of the impact on the building, and it would be helpful if the assessment included visualisations, such as photomontages, from the house towards the turbines.

Lochrinnie Mote, motte 250m WNW of Craigmuie Lodge (Index No. 1125).
This motte and bailey is set on a natural hillock at the confluence of the Minnigryle and Blackmark Burns. The hillock is 7m in height, and is located on low lying ground on the banks of the two burns. The motte appears to have been placed to have wide views along the river valleys to the north-west, south-west and east, and views to the south overlooking the hills of Craigmuie Moor. We note that Viewpoint 4 corresponds with the location of the motte and we look forward to receiving visualisations from this heritage asset towards the wind farm proposal.

Craigmuie Moor, Watch Knowe, fort (Index No. 1101)
This rectilinear earthwork is situated on a gentle, undulating west-facing slope on exposed moorland *c*.190 m OD. It commands extensive views in all directions, including clear views of the hills to the south-west. The monument is located *c.* 4.4 km south-east of the site boundary and the proposed wind farm may impact on the wider setting of the monument. We would therefore recommend that a detailed assessment of the impact on the monument is undertaken, and it would be helpful if the assessment included visualisations, such as wireframes and/or photomontages, from the fort towards the turbines.

Please note that any further assessment should consider impacts upon the above heritage features but also any others in the wider area which may experience significant impacts. Cumulative impacts of this development in combination with others in the vicinity should also be assessed.

Finally, we refer the applicant to our guidance notes on setting, which may be helpful while carrying out the assessment. These can also be found on our website at http://www.historic-scotland.gov.uk/setting-2.pdf. Further information on our role in the EIA process is available at http://www.historic-scotland.gov.uk/index/heritage/policy/environmental-assessment/eiafaqs.htm.

I hope this response is of assistance. Please do not hesitate to contact me on 0131 668 8729 if you wish to discuss any aspects of the advice provided.

HISTORIC SCOTLAND
ALBA AOSMHOR

Yours sincerely

Urszula Szupszynska
Senior Heritage Management Officer

CC Rhona Reid, SEDD Planning Decisions

Andrew Mott, Project Manager, Arcus Consultancy Services Ltd.

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Patrick Hanna
Planning and Environment Services
Development Management
Kirkbank
English Street
Dumfries
DG1 2HS

Date: 21 May 2013

Our Ref: CEA122814
Your Ref: 13/E/3/0005

Dear Mr Hanna

Request for screening and scoping opinion for erection of a wind farm up to 16 turbines (146.5 metres high to blade tip) at Stroanshalloch, Moniaive

Thank you for your letter dated 17 April 2013 requesting comment from Scottish Natural Heritage (SNH) on the above wind farm scoping request.

Summary
SNH is satisfied with the content of the scoping document and that the methodologies outlined should meet the requirements of EIA. We offer the following comments by way of advice at this stage.

Appraisal

Landscape and visual impacts
Given the height of the turbines and that they are at the top end of the scale for on shore wind turbines we think landscape and visual impacts are likely to be a key issue. Turbine size and perceived scale in the landscape context must be fully explored in the Environmental Statement (ES).

A possible way to explore this issue is for a range of turbine sizes to be tested through the assessment and visualisation processes of the LVIA. In addition to the proposed turbines, the following thresholds could be used: 120m, and 100m, and 80m. Alternative layouts may also be beneficial.

Given the proximity of the scheme to the Thornhill Uplands Regional Scenic Area we would expect a full assessment of the likely effects upon this designated area. The Foothills with Forestry 'Stroan' unit, does have come capacity for wind development, however the capacity is likely to be constrained by cumulative effects, as well as the proposed size of the scheme in relation to turbine height.

Scottish Natural Heritage, Greystone Park, 55/57 Moffat Road, Dumfries, DG1 1NP
Email Southern_scotland@snh.gov.uk Tel 01387 272440 Fax 01387 259247 www.snh.org.uk

We are broadly happy with the suggested viewpoints, but would offer a number of additional locations, based upon common viewpoints used for other schemes in the area and the pattern of visibility as generated by the scheme;

- Queensbery Hill NX989997
- Bishop Forest Hill NX849796
- Corserine NX497876
- Minor road to the immediate North West of Loch Urr c. NX761850
- Thornhill (appropriately micro-sited)

In terms of cumulative effects, given the number of schemes coming forward within this area, we think it likely that most viewpoints should also contain cumulative wireframes as appropriate.

SNH notes that a few of the references contained within the report are out of date. The Guidance for Landscape and Visual Impact Assessment (GLVIA) has recently been updated and the 3rd issue should now be referenced. The consultant should ensure this updated version is utilised when considering the specific method for assessing the impacts.

Our guidance on assessing cumulative impact has also been updated and is now available on our website, referenced as '*Assessing the cumulative impact of onshore wind energy developments* March 2012.'

Ornithology

We note that the proposed survey intends to utilise methodology described in the windfarm impacts on birds guidance as published on the SNH website. The applicant has contacted SNH in advance of this scoping request and discussed the vantage points (VP) and survey requirements. We do note that some areas of the site will not be covered by the VP survey, particularly to the north of turbines 6 and 7. Should survey data suggest that this, or any other area not visible from the proposed VPs, may be important in terms of flight paths, SNH would anticipate flexibility in the approach to ensure adequate coverage for a robust analysis of impacts.

SNH concurs with the main receptors identified and notes the acknowledgement of the site as a location for peregrine falcon. SNH is aware that this species has been directly affected by adjacent wind farms and therefore a robust cumulative impact on this and other bird species will be necessary.

The report requests comment from SNH on potential impacts on designated sites and the requirement for appropriate assessment with respect to ornithology. Until data on bird usage and movement through the area is gathered it would be premature to pre-empt any requirements in this regard. SNH will be happy to discuss this further at the appropriate time; however the report has correctly identified Loch Ken and River Dee Marshes Special Protection Area (SPA) as a potential receptor for goose interests.

Other natural heritage interests

SNH is satisfied that the report has identified the main natural heritage receptors likely to be found in this area and is pleased that impacts on hydrology and peat will be considered.

SNH notes that a phase 1 habitat survey is proposed for the site. We would draw the developer's attention to Stroanschalloch Loch and the area around it, which is part of a mire system that supports a number of rare sedge species. There is potential for the development to have an impact directly on the mire or indirectly through the area's hydrology. Therefore careful consideration should be given to turbine location with respect to the mire. SNH can provide details of these species records if required.

Although the proposed development is not in a Red Squirrel Priority Woodland, given the importance of the region for this species, it would be advisable to consider potential impacts in the ES and also with regard tree species selection for any reforestation proposed.

Further general guidance is detailed in Annex 1 below.

Should you have any further questions, please do not hesitate to contact me.

Yours Sincerely

[redacted]

Dylan De Silva
Operations officer
Southern Scotland
dylan.desilva@snh.gov.uk

Annex 1 – General advice, sources of guidance and information

1. Service Level Statement (SLS) and further advice

We refer the applicant to our SLS (http://www.snh.org.uk/pdfs/strategy/renewable/RE-SLS.pdf), which sets out the level of engagement they may expect from us during the planning process. In line with our SLS, where the impacts on the natural heritage warrant additional input we are happy to provide further advice to the applicant prior to the submission of the Environmental Statement (ES). We ask that the applicant allows sufficient time in their project plan to accommodate our advice, which may take some time to compile. (Our customer care response deadline is 20 working days or sooner, but on some occasions statutory casework will take priority and cause delays in responding to requests for advice).

2. General advice, guidance and information

A host of guidance and advice for wind farm developments is available on our website, covering topics such as landscape, birds and protected species:

a. Guidance for assessing impacts on the natural heritage

Our advice is that the applicant should refer to, but not be limited to, the following sources of SNH guidance and information to ensure they undertake a robust EIA:

- http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/ (this page also has links to topic specific guidance, eg birds and landscape, that should be referred to)
- http://www.snh.gov.uk/planning-and-development/advice-for-planners-and-developers/protected-animals/
- http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/landscape-policy-and-guidance/

We would expect the applicant to follow the latest guidance. The applicant should note that some of our guidance is currently under review - we would expect the applicant to follow the latest guidance, appropriate to the time of ES submission. The applicant should note that non-avian species surveys should be completed no more than 18 months prior to submission of the application, to ensure that they are a contemporary reflection of species activity at and around the site. If significant land use, habitat or population changes have occurred during this time, advice should be sought from us prior to application submission to ensure the surveys will be adequate. Where survey methods or other work deviates from the published guidance, this should be agreed with us in advance to ensure that any deviations still meet our needs. A full explanation of why any deviations are considered appropriate should also be provided in the ES for the benefit of others. The results of the surveys should be used to avoid or minimise impacts, thereby informing the iterative layout and design of the wind farm.

b. Terrestrial habitats (including peat and forestry)

With regard to terrestrial habitats (including peat), our general advice is that the whole development site and an appropriate buffer (eg to allow for micro-siting) should be surveyed to Phase 1 standard. In addition to a Phase 1 survey, where habitats consistent with those on Annex 1 of the EC Habitats Directive together with UKBAP Priority Habitats are present, they should be mapped to NVC standard and accompanied by supporting quadrat information. Rare and scarce associated plant species should also be recorded.

Where peat is likely to be present, thorough peat probing should be carried out of the proposed locations of turbines, tracks and other infrastructure, and used to inform a peat slide risk assessment. The survey results should be used to inform the design and layout process, so that the development avoids, where possible, fragile and priority habitats and other sensitive areas (eg blanket bog and deep peat). Where this is not possible, suitable restoration and/or compensation will require to be carried out, and draft details of how this will be done should be presented in the ES. (We have recently published advice on what to include and consider in Habitat Management Plans (http://www.snh.gov.uk/docs/B1159444.pdf), which the applicant should refer to.) We also strongly recommend early engagement with SEPA with regard to excavated peat reuse and disposal.

An assessment of impacts of hydrological changes (particularly related to groundwater) on habitats should also be included. As the access tracks are the elements that will result in the greatest land take, habitat fragmentation and, potentially hydrological disruption, it is important that the track construction methods are clearly described in the ES, the rationale for their type and location articulated and all direct and indirect impacts assessed.

If tree felling/woodland clearance will be required as part of the proposed development, we recommend that the applicant contacts FCS at as early a stage as possible to discuss the Control of Woodland Removal Policy and the implications it may have on the development.

c. Freshwater

Where the proposed development site has permanent watercourses or water bodies in it or connected to it, we strongly recommend that the advice of Scottish Environment Protection Agency (SEPA) is sought regarding water crossings and the adequacy of any hydrological work undertaken as part of the EIA. With reference to potential impacts on the natural heritage, as a minimum we would expect all areas directly (eg watercourse crossings) or indirectly (eg sediment run off) affected by the development and appropriate buffers up and downstream to have a habitat survey following the Scottish Fisheries Coordination Centre method referenced below. This should inform the likelihood of the presence of salmonids, eels, freshwater pearl mussel and other freshwater protected species and so the need or otherwise for species specific surveys. The applicant should note that where there is connectivity to protected areas (eg river or loch Special Areas of Conservation), then a higher level of survey effort and assessment targeted to the interest of the protected area may be needed to inform the required appraisals for the protected area.

SNH guidance on freshwater pearl mussel survey methods can be found on our website via http://www.snh.gov.uk/docs/A372955.pdf. The Scottish Fisheries Coordination Centre (SFCC) webpage http://www.scotland.gov.uk/Topics/marine/science/sfcc/Protocols provides links to the recommended SFCC habitat survey method (*Habitat Surveys Training Course Manual, Revised August 2007),* aswell as other useful survey method information for fish. Note that where there is suitable habitat for freshwater pearl mussel, and particularly where salmonids are present, we would expect a freshwater pearl mussel survey to be carried out following our guidance.

It should be noted that the absence of records for a particular watercourse or impassable obstacles does not necessarily mean that species are not present, so species surveys should not be ruled out for this reason. (It could just be because that watercourse has not been surveyed before. In addition, some species have been found in unexpected places, including above impassable fish obstacles.)

d. Deer management

If deer are present on or use the site, a Deer Management Plan will be required to address deer welfare issues. The deer management plan must comply with current Wild Deer Best Practice standards. Guidance on the creation of deer management plans can be found via http://www.bestpracticeguides.org.uk/planning_dmps.aspx and chapter 4 of the Code of Practice on Deer Management (http://www.snh.gov.uk/docs/B949709.pdf). Particular consideration needs to be given to deer numbers on site, construction displacement, the potential for the wind farm to create new sources of food and/or shelter, the impacts this may have and how this will be monitored and managed over time. It should also take into account the potentially competing objectives of any other objectives for the site (eg habitat restoration), and seek the optimum outcome for both. We recommend that staff responsible for deer management at the site provide the applicant with local knowledge and advice, to help the applicant draft a wind farm specific deer monitoring and management plan.

The plan should take a collaborative approach to deer management planning and the need for landowners to deliver not only their own objectives but also public objectives through their activities. We would expect the plan to take into account the objectives of neighbours and how any changes to deer movements may affect their properties.

Further guidance on these issues is available in the Code of Practice on Deer Management;
http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/code-of-deermanagement/.

Where the proposed development site is in close proximity to protected area(s) designated for habitat or species interests, the Plan must also take into account the conservation objectives of the protected area(s). Where there are conflicting interests, the overriding aim of the deer management plan must be to ensure the conservation objectives of the protected area(s) are maintained.

e. Access & Recreation

With reference to the Land Reform (Scotland) Act 2003, our advice is that the applicant must pay due regard to the potential use of the area for recreation by the general public when designing and planning the proposed development and associated construction works. Regard should be given not only to the proposed development sites but also the proposed access routes and additional tracks, which may increase the perceived recreational value of the area. We recommend that the applicant identifies the current recreational activities within the study area and makes an assessment of any positive or negative impacts that may occur as a consequence of the development proposals (both during construction and operation). The assessment should consider impacts on recreational activity as well as any associated impacts on the natural heritage (including landscape and visual).

Our advice is that access should not be restricted unless necessary for health and safety or other overriding reasons. Where access requires to be restricted at any time, clear signage following the Scottish Outdoor Access Code branding guidelines is strongly recommended (http://www.outdooraccess-scotland.com/branding/).'

f. Grid connection

With regard to grid connection, we recommend that if the applicant has confirmed details of all or part the grid connection at the time of ES submission, these details are provided in the ES along with assessments of the impacts of the grid connection on the natural heritage (in particular, the nearby protected areas). As there may be impacts on the natural heritage from the grid connection, we would be happy to advise the relevant authority in due course on any grid connection.

g. Decommissioning

As it is anticipated that there would be some 25 years between construction and decommissioning/repowering, we recommend that the decommissioning section of the ES is brief. It should be subject to review and approval by the Planning Authority in the 3-5 years prior to the year of decommissioning. This is because environmental conditions, laws and techniques will invariably change over that time period. However, as decommissioning and redevelopment of the site are both potential options, the EIA process should consider the implications and assess the likely impacts of both, as these are likely to be very different and may influence how the current proposal is developed.

Our advice is that there should be a presumption that new tracks will be removed and current tracks restored to the current width during the decommissioning process, to return the site to the same or better state than pre-construction. However, we recognise that there could be situations where retention of some tracks might be beneficial (eg for access and recreation where they provide links to important routes, where removal may cause damage to important natural heritage interests, etc). We therefore recommend that there is a presumption for new track removal/existing tracks reinstatement to their previous width plus restoration as part of decommissioning, but that the pros and cons of track removal/retention for each individual site are considered more fully in the 3-5 years prior to decommissioning, in consultation with the Planning Authority (and others such as SNH and SEPA, as appropriate).

3. Contents and format of the ES

Full survey details including raw data, workings for calculations, and for birds the viewshed maps and flight maps with labelled flightlines showing the flights banded into below, at and above collision risk height and referenced to a table of flight data, etc, should be presented in the ES. Information and assessment of direct and indirect impacts (including cumulative), along with details of any mitigation should also be presented.

We recommend that the ecological chapters are split into protected areas, species (avian, non-avian), habitats (terrestrial, freshwater), etc. Sensitive species information can be presented in a confidential annex with restricted circulation. Advice on how to deal with sensitive information can be found via http://www.snh.gov.uk/docs/A285693.pdf

As a minimum, we request one full copy of the ES (including confidential annexes) on cd (with file sizes of <10MB per pdf), plus a full duplicate hard copy. This is so that we can be sure that LVIA visualisations in particular are presented as the applicant intends, and can circulate the files to the relevant specialist SNH advisors.

Trunk Road and Bus Operations

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Direct Line: 0141 272 7331, Fax: 0141 272 7350
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CÒMHDHAIL ALBA
TRANSPORT SCOTLAND

Dumfries & Galloway Council

FAO Patrick Hannah

Your ref:
13/E/3/0005

Our ref:
EIA/DAG/101

THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2011
ERECTION OF A WIND FARM UP TO 16 WIND TURBINES AT STROANSHALLOCH, MONIAIVE (SCREENING / SCOPING OPINION)

Dear Mr Hannah

I refer to your letter of 17 April 2013, and the accompanying report.

Overall there will be a minimal increase in traffic on the trunk road during the operation of the facility therefore the proposed development is not likely to have a significant impact on the operation of the trunk road network.

However, it is likely that as many of the construction loads may be categorised as abnormal, authorisation from our management organisation Scotland Transerv be required. It is advisable that Scotland Transerv are consulted as to the feasibility of transportation of these items to site. Due to the frequency and number of these loads it is UK policy to restrict these movements via the nearest suitable port.

I trust this meets your requirements.

Yours sincerely,

Mark Paterson
Development Management

cc. Rhona Reid SG DBE Planning (Email)

SEPA
Scottish Environment Protection Agency

Our ref: PCS/126192
Your ref: 13/E/3/0005
If telephoning ask for:
Diarmuid O'Connor

23 April 2013

Patrick Hanna
Dumfries & Galloway Council
Kirkbank
English Street
Dumfries, DG1 2HS

By email only to: patrick.hanna@dumgal.gov.uk

Dear Sir

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011
Scoping consultation
Request for screening & scoping opinion under Environmental Impact Assessment (Scotland) Regulations 2011 for the erection of a wind farm up to 16 wind turbines (146.5 metres high to blade tip)
Stroanshalloch, Moniaive

Thank you for consulting SEPA on the scoping opinion for the above development proposal by way of your letter which we received on 18 April 2013. We would welcome meeting with the applicant at an early stage to discuss any of the issues raised in this letter. We consider that the following key issues should be addressed in the EIA process: carbon balance, disruption to wetlands including peatlands, disturbance and reuse of excavated peat, existing groundwater abstractions, engineering activities in the water environment, water abstraction, forestry removal & forest waste, pollution prevention and environmental management, borrow pits, air quality and flood risk.

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.

In addition we would refer you to *Good Practice During Windfarm Construction* prepared by SNH, SEPA and the windfarm industry and our *Regulatory Position Statement – Developments on Peat*

1. Carbon balance

1.1 Scottish Planning Policy (SPP) states (Paragraph 133) that "the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to carbon emissions. Where peat and other carbon rich soils are present, applicants should assess the likely effects associated with any development work." We note that SPP (paragraph 230) also states "All areas of peatland that retain a high level of natural heritage conservation interest, archaeological interest or are of value as carbon stores should be protected through development plans and development management decisions." The ES or planning submission should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels, cable trenches, or the storage and re-use of excavated peat. 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 for windfarm planning applications, 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

2.1 If there are wetlands or peatland systems present, the ES or planning submission should demonstrate how the layout and design of the proposal, including any associated borrow pits, hard standing and roads, avoid impact on such areas.

2.2 A Phase 1 habitat survey should be carried out for the whole site and the guidance A Functional Wetland Typology for Scotland should be used to help identify all wetland areas. National Vegetation Classification should be completed for any wetlands identified. Results of these findings should be submitted, including a map with all the proposed infrastructure overlain on the vegetation maps to clearly show which areas will be impacted and avoided.

2.3 Groundwater dependent terrestrial ecosystems, which are types of wetland, are specifically protected under the Water Framework Directive. The results of the National Vegetation Classification survey and Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments should be used to identify if wetlands are groundwater dependent terrestrial ecosystems.

2.4 The route of roads, tracks or trenches within 100 m of groundwater dependent terrestrial ecosystems (identified in Appendix 2) should be reconsidered. Similarly, the locations of borrow pits or foundations within 250 m of such ecosystems should be reconsidered. If infrastructure cannot be relocated outwith the buffer zones of these ecosystems then the likely impact on them will require further assessment. This assessment should be carried out if these ecosystems occur within or outwith the site boundary so that the full impacts on the proposals are assessed. The results of this assessment and necessary mitigation measures should be included in the ES.

2.5 For areas where avoidance is impossible, details of how impacts upon wetlands including peatlands are minimised and mitigated should be provided within the ES or planning submission. In particular impacts that should be considered include those from drainage, pollution and waste management. This should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, dewatering, excavations, drainage channels, cable trenches, or the storage and re-use of excavated peat. Detailed information on waste management is required as detailed below. Any mitigation proposals should also be detailed within the Construction Environmental Management Document, as detailed below.

3. Disturbance and re-use of excavated peat

3.1 Where the proposed infrastructure will impact upon peatlands, a detailed map of peat depths (this must be to full depth) should be submitted. The peat depth survey should include details of the basic peatland characteristics.

3.2 By adopting an approach of minimising disruption to peatland, the volume of excavated peat can be minimised and the commonly experienced difficulties in dealing with surplus peat reduced. The generation of surplus peat is a difficult area which needs to be addressed from the outset given the limited scope for re-use.

3.3 The ES or planning submission should detail the likely volumes of surplus peat that will be generated, including quantification of catotelmic and acrotelmic peat, and the principles of how the surplus peat will be reused or disposed of.

3.4 There are important waste management implications of measures to deal with surplus peat as set out within our Regulatory Position Statement - Developments on Peat. Landscaping with surplus peat (or soil) may not be of ecological benefit and consequently a waste management exemption may not apply. In addition we consider disposal of significant depth of peat as being landfilled waste, and this again may not be consentable under our regulatory regimes. Experience has shown that peat used as cover can suffer from significant drying and oxidation, and that peat redeposited at depth can lose structure and create a hazard when the stability of the material deteriorates. This creates a risk to people who may enter such areas or through the possibility of peat slide and we are aware that barbed-wire fencing has been erected around some sites in response to such risks.

3.5 It is therefore essential that the scope for minimising the extraction of peat is explored and alternative options identified that minimise risk in terms of carbon release, human health and environmental impact. Early discussion of proposals with us is essential, and an overall approach of minimisation of peatland disruption should be adopted. If it is proposed to use some excavated peat within borrow pits or bunding then details of the proposals, including depth of peat and how the hydrology of the peat will be maintained, should be outlined in the ES or planning submission.

3.6 Our Planning and Energy webpage provides links to current best practice guidance on peat survey, excavation and management.

4. Forest removal and forest waste

4.1 We would support the approach of key-holing wherever possible as large scale felling can result in a peak release of nutrients which can affect local water quality. We may, however, be supportive of clear felling in cases where planting took place on deep peat and it is proposed through a Habitat Management Plan to reinstate peat-forming habitats. This should be specifically referenced in the ES.

4.2 We would be especially interested in and are likely to have significant concerns relating to any proposals to fell to waste where the waste generated by the process will be managed by techniques such as chipping, mulching or spreading. This is because where material is classed as waste then appropriate waste management options require consideration and, where appropriate, adoption. In such cases we would wish the ES to include information which explains how the waste hierarchy has been applied in a way which delivers the best overall environmental outcome and if this is not demonstrated we are likely to be object to the application.

4.3 It has previously been argued that using waste on the site could yield an ecological improvement and so has been considered as an exemption under waste management licensing. However, this approach is now being questioned as the results of early research show there is a lack of clarity and evidence to support the claim that this practice delivers overall ecological improvement for the main target vegetation types (blanket bog or wet heath).Currently, this restoration practice is being tested and researched at a number of sites across Scotland. This research will provide greater clarity on the benefits and risks associated with the practice. If ecological benefit from use of waste is to be claimed, then reliable site-specific evidence must be provided. For avoidance of doubt, where it is sought to claim ecological benefit from deposition of forestry waste a) the ecological benefit must relate to the land to which the waste is applied rather than off-site benefits and b) there must not be an ecological harm also associated with the deposition of the waste. Note that if there are likely to be significant amounts of surplus forestry material without a clear use, and if scope for an exemption under waste management is unclear, then unfortunately we may need to object to an application due to our inability to advise on consentability under our regulatory regime and hence it is essential that these issues are addressed at an early stage.

4.4 Nationally we are working with our SEARS partners to agree common principles for considering the use of forest material / waste wood on peatland sites for restoration projects. This work is currently being agreed and will soon be published on our website as *Principles for Use of Forest Residue for Peatland Restoration.* The draft principles within it which should be applied are as follows:

- Full justification for using the material on-site must be provided. Evidence must be provided to show that all options for use of the material off-site have been considered;

- The proposed use of the material must be beneficial in reaching the objectives of the Habitat Management Plan (HMP) as agreed by the local authority in consultation with statutory agencies (SNH and SEPA). Detailed monitoring proposals should be included in the HMP;

- Material used on site should not have any negative impact on the water environment or other sensitive receptors (e.g. protected species);

- Details of the size, volume, and depth of material to be used on site must be provided. A detailed map showing areas where the material will be used and extent of cover should also be provided;

- A clear specification for contractors is required to ensure the correct machinery is used, and that any material left on site is used in line with the HMP. The quality of the material is an important factor; maximum chip size (or other criteria) should be defined and agreed with the contractor. A maximum depth of material should also be agreed with the contractor.

4.5 We ask that where the ecological benefit proposed by the fell to waste activity does not relate to improvement of peatland habitats that the expected environmental benefit is outlined and fully justified in the ES.

5. Existing groundwater abstractions

5.1 Roads, foundations and other construction works associated with large scale developments can disrupt groundwater flow and impact on groundwater abstractions. To address this risk a list of groundwater abstractions both within and outwith the site boundary, within a radius of i)100 m from roads, tracks and trenches and ii) 250 m from borrow pits and foundations) should be provided.

5.2 If groundwater abstractions are identified within the 100 m radius of roads, tracks and trenches or 250 m radius from borrow pits and foundations, then either the applicant should ensure that the route or location of engineering operations avoid this buffer area or further information and investigations will be required to show that impacts on abstractions are acceptable. Further details can be found in Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments.

6. Engineering activities in the water environment

6.1 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 211 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.

6.2 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.

6.3 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.

6.4 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.

7. Water abstraction

7.1 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, 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.

7.2 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.

8. Pollution prevention and environmental management

8.1 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.

8.2 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. Details of the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of our website.

8.3 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).

8.4 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.

9. Borrow pits

9.1 Detailed investigations in relation to the need for and impact of such facilities should be contained in the ES or planning submission. Where borrow pits are proposed, information should be provided regarding their location, size and nature. In particular, details of the proposed depth of the excavation compared to the actual topography and water table should be submitted. In addition details of the proposed restoration profile, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement should be submitted.

9.2 The impact of such facilities (including dust, blasting and impact on water) should be appraised as part of the overall impact of the scheme. Information should cover, in relation to water; at least the information set out in 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 abstraction or groundwater dependent terrestrial ecosystem within 250 m of the borrow pit. Additional information on groundwater is provided above.

10. Air quality

10.1 The local authority is the responsible authority for local air quality management under the Environment Act 1995 and therefore we recommend that Environmental Health within the local authority be consulted.

10.2 They can advise on the need for this development proposal to be assessed alongside other developments that could contribute to an increase in road traffic. They can also advise on potential impacts such as exacerbation of local air pollution, noise and nuisance issues and cumulative impacts of all development in the local area. Further guidance regarding these issues is provided in NSCA guidance (2006) entitled Development Control: Planning for Air Quality.

11. Flood risk

11.1 The site should be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211). Our Indicative River & Coastal Flood Map (Scotland) is 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.

11.2 If a flood risk is identified then a Flood Risk Assessment should be carried out following the guidance set out in the Annex to the SEPA-Planning Authority flood risk protocol. Our Technical flood risk guidance for stakeholders outlines the information we require to be submitted as part of a Flood Risk Assessment, and methodologies that may be appropriate for hydrological and hydraulic modelling.

12. Regulatory advice for the applicant

12.1 Details of regulatory requirements and good practice advice for the applicant can be found on our website at www.sepa.org.uk/planning.aspx. 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:

Rivers House
Lochside Industrial Estate
Irongray Road
Dumfries
DG2 0JE

Tel No 01387-720502

If you have any queries relating to this letter, please contact me by telephone on 0131-449-8554 or e-mail at planning.ek@sepa.org.uk .

Yours faithfully

Diarmuid O'Connor
Planning Officer
Planning Service

Copy to:

Andrew Mott
Suite 1C
Swinegate Court East
3 Swinegate
York
YO1 8AJ

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.

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www.rspb.org.uk/scotland

Planning and Environment Services,,
Development Management,
Kirkbank,
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15 May 2013

FAO Patrick Hanna

Dear Patrick,

Environmental Impact Assessment (Scotland) Regulations 2011. Request for screening and scoping opinion for the erection of a wind farm of up to 16 wind turbines (146.5 m) at Stroanshalloch, Moniaive, Dumfriesshire. Ref: 13/E/3/0005

Many thanks for consulting RSPB Scotland on this proposal. RSPB Scotland is supportive of the use of renewable technology but believes wind farms must be carefully designed to avoid negative impacts on sites and species of conservation importance.

We have studied the Scoping Report and conclude that, for the most part, it adequately covers the potential impacts on wild birds, and has taken account of the need to assess the impacts on habitats and peat.

We have the following detailed comments on the document (page numbers and figures given in brackets as paragraph headings refer to those used in the document).

(page 36; 8.14)
We strongly recommend that Dumfries & Galloway Environmental Resource Centre is also contacted. They can be contacted at mpollitt@dgerc.org.uk and they have the most comprehensive datasets on all taxa in the region. RSPB holds some data on breeding birds in the area, including black grouse, and these data can be obtained through clare.bunyard@rspb.org.uk .

(page 37; 8.24)
It is proposed that impacts on birds will be set in the context of SNH's Natural Heritage Zones (NHZ). However, these impacts should also be set in the context of **Local Authority boundaries**.

Of course, birds do not recognise either of these boundaries in terms of their habits, particularly migrating birds and foraging raptors, but raptor populations are monitored and measured locally, regionally and nationally with regard to Local Authority boundaries, and indeed Local Authorities have statutory duties with regard to biodiversity within their boundaries. Therefore, it would be helpful to set impacts additionally in this context.

(page 41; 8.46)
We very much agree that peregrine falcon is indeed a sensitive receptor at this site, which is only a relatively short distance from a regularly occupied and long-standing breeding site. Moreover, we are aware of the recent chance finding of a fatal collision peregrine victim, at adjacent Wether Hill Wind Farm, within recent weeks. A number of other consented and constructed wind farms have predicted collision risks for this EU Annex 1 species, and it will be important to fully assess collision risk and examine this cumulatively with other sites in the **region** (as well as NHZ).

Compensation
Whilst we welcome the acknowledged need to address mitigation, there appears to be little or no mention of compensation. By their nature, all developments in the countryside have the potential to reduce available semi-natural habitat and thus impact on dependent species. In addition, given the relatively large scale of wind farm developments and the stated environmental ethos underpinning them, it is wholly reasonable to expect that `planning gain' should provide environmental benefits on site through habitat creation and/or enhancement, according to the priorities and possibilities identified on site, should the development be consented.

Therefore, we would wish to see plans for habitat creation and enhancement included in an Environmental Assessment accompanying any subsequent planning application.

Many thanks for consulting RSPB Scotland on this scoping request, and please do not hesitate to contact us if you require clarification or further information.

Yours sincerely,

Chris Rollie,
Area Manager, Dumfries & Galloway.

Internal Memo

DGFirst - Roads Service (Nithsdale)
Wayside Depot, Annan Road, Dumfries
Drop Point: 267

17 May 2013

To: Area Planning Manager (Nithsdale) Your ref: 13/E/3/0005

Drop Point: 208

From: Development Team Leader (Nithsdale) Our ref: 13/E/30005 KDD/KM

REQUEST FOR SCREENING & SCOPING OPINION UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011 FOR THE ERECTION OF A WIND FARM UP TO 16 WIND TURBINES (146.5 METRES HIGH TO BLADE TIP)
AT STROANSHALLOCH, MONIAIVE

I refer to your consultation dated 17 April 2013 with regard to the above.

Road

B729 Dumfries – Carsphairn

Comments

This Scoping Opinion application proposes the erection of up to 16 wind turbines at Stroanshalloch, Moniaive. The construction phase is anticipated to take up to 12 months.

It is noted that the Scoping Report identifies that:-

- (para 3.2) the turbines might typically have a maximum tip height of 146.5m.
- (para 3.7) an abnormal load assessment will be undertaken to demonstrate the availability of a suitable route.
- (para 3.8) turbine component delivery could be delivered to site from Ayr via the B729
- (para 3.8) the traffic assessment would determine the requirements for upgrading of junctions or minor roads and would include swept path tracking.
- (para 3.20) stone will be extracted from on-site borrow pits if available else imported to site from elsewhere.
- (para 3.22) the grid connection will fall under a separate planning application and will be subject to a separate environmental investigation.

- (para 12.7) in assessing traffic effects an access route study will consider the physical constraints and measures required for access.
- (para 12.9) the study will consider effects on Road Uses, Road Infrastructure and Adjacent communities/properties.

I would offer the following observations:-

- East of the proposed site, the village of Moniaive is located on the A702 at the junction with the B729. This village is characterised by narrow streets that have locally poor horizontal alignment, locally restricted forward visibility, restricted width and have restricted passing opportunities. On the timber haulage Agreed Routes Map the A702 through Dunreggan/Moniaive is identified as an excluded route. I would not be in favour of any construction traffic accessing this proposed site from the east.
- The Traffic Management Plan for development of the nearby Wether Hill wind farm (03/P/30746) specifically identified that all construction traffic should access the site from the west via the A713 to Carsphairn and onto the B729 to the site entrance. Whilst the Scoping Report indicates that access is still being considered, any future Environmental Statement or applicationfor this site should reflect this access restriction.
- There should be consultation with nearby forest managers and timber hauliers through the office of South of Scotland Timber Transport Officer to co-ordinate timber haulage operations during the construction period to minimise the cumulative impact on communities and road users.
- The formation of a temporary site access onto the B729 will require to be located, designed and constructed to the satisfaction of the Roads Authority in consultation with the Planning Authority and be subject to planning consent.
- Any future Environmental Statement or application should identify the full extent of off-site road accommodation and mitigation works including passing place provision, carriageway strengthening, widening and alterations to road boundaries all along any proposed access routes necessary to permit construction traffic and the passage of component delivery vehicles (a separate planning consent may be required in respect of these works).
- Any future Environmental Statement or application should include details of proposed mitigation measures to include agreed access route, details of measures that will be implemented to ensure that no stacking of delivery vehicles occur on any part of the public road network and a Traffic Management Plan to be prepared by the applicant (and to be agreed in writing with the Police and the Roads Authority prior to any works commencing on site).
- To permit an assessment of the impact of this proposal, any future Environmental Statement or application should include a full breakdown of all expected vehicle movements by vehicle type and by month and this should include the haulage of all aggregate from outwith the site (in the event that suitable borrow pits are not found to be available locally).
- The developer will be held responsible for the immediate execution of any repairs and will be required to meet the cost of above average maintenance to the public road network arising from the concentration of heavy traffic associated with this development.
- The installation of the grid connection will have an impact upon public roads where the route follows a road, crosses a road or crosses a bridge on the road.
- Where an access route crosses bridges and culverts, the applicant will require to get approvals (in respect of those structures) from the Council's DGDesign Bridges and Structures Unit.

In respect of the Key Questions (para 12.15)

- I have no objection to the proposed method of assessment.
- The issue of access restrictions or limitations on the proposed access route has been addressed above.

From: Swailes, Janet
Sent: 29 April 2013 15:05
To: Hanna, Patrick
Cc: Kay, Janice; Maxwell, Andrew - Planning & Environment Services
Subject: Stroanshalloch Viewpoint List

Hi Pat

Stroanshalloch attached.

Also attached FYI is an integrated list for several of the Stewartry schemes and Stroanshalloch for your future use if I am not able to put much time in. I have a similar list and accompanying map for the Machars and found it speeds up doing the scoping / viewpoint lists.

Please note that I have not been able to supply other scoping information for the Stroanshalloch proposal due to prioritisation of live applications. However, I will try to do this if time becomes available.

Best Wishes
Janet

Janet Swailes
Landscape Architect

Dumfries and Galloway Council
Environmental Planning,
Room 301, Militia House, Dumfries, DG1 2HR

Memo

To Pat Hanna, Janice Kay
From Janet Swailes

Date 29 April 2013

Landscape scoping advice
Stroanshalloch Viewpoint List

Within / in proximity of and / or anticipated intervisibility with DG.

Cumulative wirelines and selected Photomontage are recommended for all viewpoints given the existing and proposed developments in the area.

x - Viewpoints selected to be site checked to provide a fuller representation of local landscape, visual and cumulative sensitivities, and also with respect to consistency of VP selection with other schemes in the area.

	Lorg 12/E/2/0042	Longburn	Margree	Loch Urr 12/E/2/0007	Stroan-shalloch 13/E/3/0005	Collieston Hill 13/E/2/0005	Mochrum Fell 12/E/2/0047 & Benshinnie 12/E/2/0013		
Local residencies (within 2km of proposal)									
Stroanshalloch:									
Craiglearan, GR: 71 6 92 0, (& / or Auchenstroan)					x				
Troston, GR: 68 8 89 4					x				
Local road network									
Circuit of minor road around Loch Urr: • NW, GR: 75 0 85 7 • E, GR: 78 3 84 6 • W, GR: 75 1 84 8 • E approach, GR: 79 8 84 2 • S, GR: 76 3 81 1 • Shillingland junction			9	x x x x x 3	x	x	x		

• Drumwhirn, GR: 74 8 80 9						2			
Minor road to NW of Corsock, GR: 75 4 80 0					14				
Minor road, Clachandow Rig, or Auchenshinnoch / Finglands Farms as wcs, GR: 66 1 89 2					5				
Lochinvar Lodge, GR: 65 5 85 0			2		x				
Minor road, S of Auchenleck Hill. Good panoramic VP. GR: 92 9 97 7			15		x	x			
Track below the Mull, Keir Hills. Good panoramic VP. GR: 85 9 88 7					x				
Settlements & approaches									
Durisdeer					12				
Kirkland, 81 0 90 5				6	x				
Kirkpatrick Durham, GR: 78 6 70 4							6?		
Moniave, and approach to above Hillhead to NE, GR: 79 0 91 6				1 x	10				
Roads									
A75, nr Mollance NIDL, Dunjarg lay-by, GR: 78 7 65 9					x	14, see GR	x		
A702, nr Lochrinnie Mote, GR: 73 0 86 9					4, or by Loch Urr				
A702, Bridge over River Nith, Thornhill, GR: 87 1 95 5				12	x				
A709, Torthowald approach, GR: 03 7 78 8					x? Check on site	x			
A712, Drumhumphrey access, Corsock approach, GR: 78 0 75 0			11		x	x	x		
A712, W of New Galloway, GR: 62 2 77 4	16				x	x			
A762, S of New Galloway, GR: 63 3 77 1					15				
B729, by Carroch, GR: 67 5 91 4					1				

B729, Craigdarroch, GR: 74 0 90 9					3				
B796, Upper Rusko Cottage, GR: 55 3 62 4					x?				
Core paths & promoted trails									
Core path N of Moniave, Bardennoch Hill, GR: 78 0 92 0					x	x	x		
Core path, Turner's Monument, Glen Kiln, GR: 82 2 77 0	x				13	x	x		
Tynron Doon (289m), GR: 820 940			1	x	x, or Auchen-gibbert				
Parking & walks, nr Forrest Lodge, Polharrow, GR: 55 2 86 3					x				
Carsphairn Heritage Trail, Bennan, N of Bardennoch Hill, GR 56 3 91 8		x			x				
Carsphairn Heritage Trail, Stroanfreggan Fort, GR 63 8 92 2		x			x				
Dunbeg, Dundeugh Hill, walks, GR: 60 9 89 7		x			x				
SUW									
SUW, NE of Knowehead / Manquhill, GR: 66 3 95 0	3				x				
SUW, Benbrack , (striding arch)		5	5	5	8	15	12		
SUW, Culmark Hill		x	3	4	6				
SUW & Waterside Hill, GR: 60 8 82 0, or Dunveoch Hill if wcs, GR: 58 6 81 1	x		10		16		10		
SUW, Clenrie, GR: 55 1 82 1					x				
Destinations									
Kirkbride Church, footpath, GR: 85 5 05 6					x?				
High and Low Bennan Viewpoints, GR: 64 8 72 5				9	x	x	4		
The Striding Arches around Cairn Head									

Colt Hill, GR: 69 8 99 0	x				x?	x?			
Benbrack, GR: 68 0 97 0	x				See SUW	15			
Bail Hill, GR: 72 1 95 7	x				x	x			
Designed landscapes									
Maxwelton, IDL, Cairn Water GR: 82 6 89 8				x	11	x? See VP 6 - if wcs			
Summits									
Auchengibbert (372m), GR: 80 7 94 5					x, or Tynron Doon	9			
Auchenstroan Crag, N of site, GR: 69 3 01 3					2				
Big Morton Hill (471m), Moniave, GR: 73 1 89 7				x	x	x			
Bishop Forest Hill (392m), Glen Kiln, Core path & RSA, GR: 85 0 79 6				x	x	x			
Bogrie Hill (432m), GR: 79 0 85 9					x	x			
Cairnkinna (554m), Scar Water, GR: 79 2 01 9	x				x	x			
Cairnsmore of Carsphairn (797m), or Benniner (710m), GR: 60 5 97 2, wcs	5	7	10	x	7 x				
Castle Hill, towards Cairnhead, GR: 72 9 94 0					9				
Corserine high point (814m) Rhinns of Kells, GR: 49 8 87 0	15	8	12		x	x	x		
Queensberry (697m)	20				x				
Screel, East Stewartry Coast NSA					x? Check on site				
Wauk Hill (357m), Keir Hills, GR: 84 2 90 9	12				x				

From: Macphee, Douglas **On Behalf Of** P&E Flooding
Sent: 08 May 2013 12:28
To: Hanna, Patrick
Subject: 13/E/3/0005 - Request for screening & scoping opinion under environmental impact assessment (scotland) regulations 2011 for the erection of a wind farm up to 16 wind turbines (146.5 metres high to blade tip

Patrick,

With reference to planning application 13/E/3/0005, the Flood Risk Management Team (FRMT) have reviewed the information provided and have made the following observations:

- The area proposed for development lies outwith 1 in 200 year (0.5% probability) fluvial floodplain as detailed on DGi (information from SEPA),
- There is historical data showing flooding in this area in 2011, however the site appears to be Greenfield,
- Developer needs to manage surface runoff from the site. Runoff should mimic that of existing conditions and not be increased,
- Developer should not increase the rate of runoff into The Water of Ballinnie Burn which runs through the South of the site from West to East or the Stroanshalloch Burn which runs from West to East along the North boundary of the site. Any significant increase may increase the flood risk downstream.

Recommendations:

- Before FRMT can fully comment on this development developer should submit the EIA for review. EIA to include the measures in place to deal with the pluvial flows during construction and when the development is completed.

This is a response to a request for information regarding development and flood risk to inform the Planning Authority's decision in this application and is based on the information supplied. As an internal consultee, and to ensure transparency and auditability in the process, all queries from the applicant regarding information supplied by the FRMT should, in the first instance, be directed to the appropriate Planning Officer.

Please call if you wish to discuss further.

Regards

Flood Risk Management Team
Dumfries and Galloway Council
Infrastructure and Commissioning
Militia House, English Street
Dumfries, DG1 2HR
Telephone [Int / Ext] 64303 / (01387) 260303
Fax (01387) 260111
Drop Point 207
(mailto:pe.flooding@dumgal.gov.uk)
http://www.dumgal.gov.uk/flooding

PLANNING & ENVIRONMENT
AREA PLANNING OFFICE : NITHSDALE

CONSULTATION SCHEDULE

17/04/2013
Ref: 13/E/3/0005
CaseOfficer: Patrick Hanna

1. DETAILS OF APPLICATION

Application Type: Scoping opinion

REQUEST FOR SCREENING & SCOPING OPINION UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011 FOR THE ERECTION OF A WIND FARM UP TO 16 WIND TURBINES (146.5 METRES HIGH TO BLADE TIP)
AT STROANSHALLOCH, MONIAIVE
Grid Refr: 270727, 590885

Applicant's name and address:-

Andrew Mott
Arcus Consultancy Services
Suite 1C
Swinegate Court East
3 Swinegate
York
YO1 8AJ

Agent's name and address:-

Previous Permissions etc.:

2. RESPONSE

Date reply due: 08/05/2013

~~Y/N No objection~~

(Y)/N My report is attached

~~Y/N No objection subject to the following conditions and / or directives:-~~

PLANNING & BUILDING SERVICES
06 JUN 2013
KIRKBANK, DUMFRIES

OR: I wish to comment on the application, however for the reason given on the attached note it may not be possible to complete my report within 21 days. I expect to complete my report by :-

.....[redacted].....

Signed [redacted] (WILL JACKSON - EHO) .....
Environmental Standards

PLANNING & BUILDING SERVICES

06 JUN 2013

KIRKBANK, DUMFRIES

PLANNING CONSULTATION REF: 13/E/3/0005

ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011
REQUEST FOR SCREENING & SCOPING OPINION UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011 FOR THE ERECTION OF A WIND FARM UP TO 16 WIND TURBINES (146.5 METRES HIGH TO BLADE TIP) at STROANSHALLOCH, MONIAIVE

We have no objections in principal. However, until a site specific noise impact assessment has been carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU Report ETSU-R-97, 1996 we would be unable to comment fully as to the expected impacts.

The site specific assessment should be carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU Report ETSU-R-97, 1996

We suggest that the proposal should be designed to meet the lower noise limits as specified in the ETSU-R-97 document.

We additionally suggest that a method statement for the construction project should be provided within the EIA for approval by Dumfries & Galloway Council. This should include an assessment of potentially noisy operations and outline the noise mitigation measures proposed. This will also include a programme and phases for each stage of work. Guidance as to construction noise prediction methodology may be found within BS5228:2009.

[redacted]

William Jackson
ENVIRONMENTAL HEALTH OFFICER

From: Norman, Peter
Sent: 09 May 2013 17:20
To: Hanna, Patrick
Subject: 13/E/3/0005 - Stroanshalloch, Moniaive

13/E/3/0005 - Request for screening & scoping opinion under environmental impact assessment (Scotland) regulations 2011 for the erection of a wind farm up to 16 wind turbines (146.5metres high to blade tip) at Stroanshalloch, Moniaive

Dear Pat,
I refer to your consultation on the above application.

I have considered the Scoping Report and associated documents and offer the following comments in relation to sections on Ecology and Ornithology.

I am generally content with the scope of the proposed ecological and ornithological surveys, evaluation and impact assessments.

I welcome the proposal to carry out an Extended Phase 1 Survey of habitats in the development site and adjacent areas. In addition to any sites identified for national importance, such as ancient woodland, the survey should identify and evaluate habitats of local importance, as identified as Local Priority Habitats in the Dumfries and Galloway Local Biodiversity Action Plan (2009).

Similarly, ornithological and species surveys should, in addition to statutory protected species and species of national importance, identify and evaluate species of local importance, as identified as Local Priority Habitats in the Dumfries and Galloway Local Biodiversity Action Plan.

Proposals should, wherever possible, contribute to the aims and objectives of the Dumfries and Galloway Local Biodiversity Action Plan through mitigation and enhancement plans.

Regards
Peter

Peter Norman
Biodiversity Officer
Dumfries & Galloway Council
Planning & Environment
Militia House
English Street
Dumfries
DG1 2HR

From: Brann, Jane
Sent: 09 May 2013 17:49
To: Hanna, Patrick
Subject: 13/E/30005 Stroanshalloch: Scoping opinion for 16 x 146m turbines

Pat,

I can provide the following comments on this request for a scoping opinion.

A scoping opinion is sought for a wind farm development comprising up to 16 wind turbines with a maximum height of 146.5 m to blade tip. The submitted document sets out a methodology for assessing effects on 'Cultural Heritage' in section 9.

It is confirmed that there is potential for a proposal of this nature at this location to have significant impact on historic environment assets and therefore potential effects will need to be assessed in the environmental impact assessment.

Both direct and indirect effects will need to be assessed.

The developer should take careful note of the following:

1.Interim Planning Policy: Wind Energy Development

The applicant should be aware of the Interim Planning Policy: Wind Energy Development, adopted February 2012. This is supported by a technical study; the Dumfries and Galloway Wind Farm Landscape Capacity Study (DGWFLCS). It is noted that the proposal does not fall into a search area for turbines over 50 metres

It is advised that the landscape capacity study considered 'Settlement and Archaeology' as one of the landscape sensitivities informing the landscape capacity study and the resulting spatial framework.

The following is an extract from **Appendix B: assessment methodology** that describes how this has been applied to inform the overall sensitivity category of the landscape character area:

Settlement and Archaeology
Large/medium wind farms, turbines greater than 50m to blade tip
Consideration of the pattern, scale and character of settlement and its relationship to the landscape. Assessment of how development might impinge on these characteristics; where there may be scope to attain some visual separation to avoid adverse scale contrasts and minimise effects on settlement setting.
Where larger scale industrial buildings are present, the scale relationships between turbines and these is also considered. Archaeological features are considered in respect of their contribution to landscape character and any potential effects on setting.

In this case, the proposal falls into **Landscape Character Type: Foothills with Forest, Stroan unit.** The Settlement and Archaeology sensitivity rating is **Medium** for turbines over 80m in height. The specific advice given in the DGWFLCS must be considered and assessed in progressing any proposal.

In addition, Section 7 of Interim Planning Policy: Wind Energy Development contains guidance on Historic Environment and Cultural Heritage for all proposals, that must be considered.

2.Direct effects

These effects may occur within or around the proposal site where development activity will take place. Assessment of these effects should be informed by a thorough desk based study. The Council Historic Environment Record identifies a number of undesignated features within the proposal area.

As the area is afforested there is no requirement to carry out a full ground survey, but known sites should be visited to check on condition and extent. The results of should be submitted to the Council in a format suitable for importation to the Council Records. (Contact Historic Environment Record Officer, see below).

3.Indirect Effects

Generally, impacts on the setting of significant historic environment assets, should be lead by the Zone of Theoretical Visibility (ZTV), with the greatest effects likely to be experienced by sites of national, (note not all are designated), or greater significance closest to the site. It is usual for effects on features of national or greater significance to be assessed out to 10km.

Analysis of the historic environment features in relation to the ZTV should be undertaken, before a finalised list of wire lines /photomontages illustrating the effects on the setting of features is agreed with Council Archaeologist.

In addition to the features noted in Tables 9.1 and 9.2, the applicant should assess effects on the 'Archaeologically Sensitive Areas' that have been designated by the Council at:

- Stroanfreggan (6.5 km to west)
- Barennoch to Garryhorn (13km to west)

These both are both based on Heritage trails, now identified as Core Paths, promoted by the Carsphairn Heritage Group.
See : http://www.dumgal.gov.uk/CHttpHandler.ashx?id=11778&p=0

4. Policy

Key policy statements that have been issued by Scottish Government in relation to the historic environment are:

- Scottish Historic Environment Policy.
- Scottish Planning Policy, paragraphs 110 -124 on Historic Environment, and 182-191 on Renewable Energy, February 2010.
- Managing Change in the Historic Environment: Setting, Historic Scotland October 2010.
- Planning Advice Note 2/2011 Planning and Archaeology

In addition to national policy the relevant Council policies covering the historic environment in this case are:

- Structure Plan policy E8: Conservation Areas
- Structure Plan Policy E9: Listed Buildings
- Structure Plan Policy E11: Historic Gardens and designed Landscapes
- Structure Plan Policy E12: Development Affecting Archaeological Site
- Structure Plan Policy E13: Archaeologically Sensitive Areas

5. Historic Environment Record

Information on features recorded in the Council Historic Environmental Record, including listed buildings, designed landscapes, and Archaeologically Sensitive Areas can be obtained from the Historic Environmental Record Officer (Andrew Nicholson), Planning and Environment, Militia House, English Street, Dumfries, DG1 2HR. Tel: 01387 260 154. In line with Council Policy there will be a charge to cover the costs of the time taken. This can be supplied in GIS and database format to facilitate integration with other data, particularly the ZTV.

If you have any queries, get in touch.

Jane Brann
Environment Team Leader and Archaeologist
Development Planning and Environment
Dumfries and Galloway Council
Militia House, English Street , Dumfries, DG1 2HR

PLANNING & ENVIRONMENT
AREA PLANNING OFFICE : NITHSDALE

CONSULTATION SCHEDULE

17/04/2013
Ref: 13/E/3/0005
CaseOfficer: Patrick Hanna

1. DETAILS OF APPLICATION

Application Type: Scoping opinion

REQUEST FOR SCREENING & SCOPING OPINION UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011 FOR THE ERECTION OF A WIND FARM UP TO 16 WIND TURBINES (146.5 METRES HIGH TO BLADE TIP)
AT STROANSHALLOCH, MONIAIVE
Grid Refr: 270727, 590885

Applicant's name and address:-

Andrew Mott
Arcus Consultancy Services
Suite 1C
Swinegate Court East
3 Swinegate
York
YO1 8AJ

Agent's name and address:-

Previous Permissions etc.:

2. RESPONSE

Date reply due: 08/05/2013

Y/~~N~~ No objection

~~Y/N My report is attached~~

~~Y/N No objection subject to the following conditions and / or directives~~:-

PLANNING & BUILDING SERVICES
26 APR 2013
KIRKBANK, DUMFRIES

OR: I wish to comment on the application, however for the reason given on the attached note it may not be possible to complete my report within 21 days. I expect to complete my report by :-

.....

Signed [redacted] .....

David Clyne

APPENDIX C – CUMULATIVE SITES

Cumulative Wind Farms within 35 km	
Operational	
Hare Hill	Plascow
Clyde	Sunnyside
Harestanes	Wether Hill
Hare Hill Extension	Dalswinton
Dersalloch	Windy Standard
Windy Standard II (Brockloch Rig Phase 1)	Minnygap
Under Construction	
Blackcraig	Torrs Hill
Afton	Whiteside Hill
Sanquhar	
Appeal Granted	
Benbrack	Mochrum Fell
Linburn Farm	South Kyle
Planning Permission Granted	
Penbreck	Knockman Hill
Crookedstane Farm	Twentyshilling Hill
Kennoxhead	Glenmuckloch
Knockshinnoch	Sanquhar 'Six'
Lion Hill	Sandy Knowe
Windy Rig	
Appeal Lodged	
Enoch Hill	Pencloe
Linfairn	Longburn
Polquhairn	
Application Submitted	
Balunton	Windy Standard III (Brockloch Rig Phase 2)
Knockendurrick	Lowther Hills (North Lowther Energy Initiative)
Wether Hill Extension	Lorg Hill
Margree	Harryburn
Ulzieside	Over Hill
Lethans	
Scoping	
Troston	Glenshimmeroch
Cornharrow	

APPENDIX D – ORNITHOLOGY SURVEY METHODS

Desk Study

22.9. Desk studies have been completed in order to collate existing available information for key species of interest that may be present in the study area. The initial desk study included searches of available online sources for data on designated sites such as the SNH Sitelink Website (http://gateway.snh.gov.uk/sitelink/) within 20 km of the Site. Also, the desk study focused on establishing the potential species that may be present in the area based on surveys undertaken to inform other wind farm assessments and the consultant's general knowledge of the bird fauna of the region.

22.10. The collated information from the desk study was used to help inform, in combination with data from the completed baseline surveys, the scoping layout and will be used to influence the final Development design and inform the assessment of the effects of the Development.

Survey Areas

22.11. The survey areas are based on the Site Boundary (Figure 7, Appendix A). The various survey areas are defined as follows:

- 'site area' refers to the area enclosed by the Development site boundary;
- 'breeding bird survey area', 'winter walkover survey area', 'core survey area' or 'flight activity survey area' refers to the site area plus an additional 500 m wide strip around the site area;
- 'barn owl survey area' refers to the site area plus an additional 1 km wide strip around the site area;
- 'black grouse survey area' refers to the site area plus an additional 1.5 km wide strip; and
- 'raptor survey area' refers to the site area plus an additional 2 km wide strip depending on the focal species and presence of contiguous suitable habitat outside of the core survey area.

Survey Methods

22.12. The first year of baseline ornithological surveys were completed between October 2012 and August 2013 (Table 1). The second year of baseline ornithological surveys commenced in April 2017 and are due to be completed at the end of March 2018 (Table 2).

22.13. The purpose of these surveys is to systematically record and assess the use of all habitats within the survey area by breeding and non-breeding birds, with a particular focus on species that are potentially sensitive to wind farm development and are also of conservation concern (i.e. species listed on Annex 1 of the EC Birds Directive, Schedule 1 of the Wildlife and

Countryside Act 1981, species on the UK Red List of birds of conservation concern). All surveys have been undertaken by suitably experienced ornithological surveyors, who have been trained in the detailed field and recording methods of each of the surveys they are completing.

22.14. Listed below are some of the key published guidance and scientific papers which have been considered in determining the detailed survey methods for this project:

- SNH (2005) Survey Methods for Use in Assessing the Impacts of Onshore Windfarms on Bird Communities, 2010 version (most recently revised May 2014);
- SNH (2012) Assessing Connectivity with Special Protection Areas (SPAs);
- Band *et al.* (2007) Developing field and analytical methods to assess avian collision risk at wind farms;
- Bibby *et al.* (2000) Bird Census Techniques;
- Gilbert *et al.* (1998) Bird Monitoring Methods;
- Brown & Shepherd (1993) A method for censusing upland breeding waders; and
- Hardey *et al.* (2013) Raptors: a Field Guide to Survey and Monitoring.

22.15. The survey area and vantage point locations for the flight activity surveys are shown on Figure 8. In summary, the following surveys have been completed:

- Winter, Spring, Summer and Autumn Flight Activity Surveys, from strategically located vantage points, to systematically quantify the use of the Site by key species (i.e. species of conservation concern and susceptibility to adverse effects from wind farm development);
- Breeding Bird Surveys involving a range of surveys completed to determine the presence and approximate location of breeding territories/sites within the core and wider survey areas, including the following:
  - Moorland breeding bird surveys of the core survey area in 2013 (May and June);
  - Breeding raptor surveys, focusing on species listed on Schedule 1 of the Wildlife & Countryside Act 1981, within suitable habitats in the raptor survey area in the Spring/Summer 2013 and Spring/Summer 2017;
  - Breeding barn owl surveys within 1 km of the site area in 2013 and 2017; and
  - Black grouse lek surveys in Spring 2013 and Spring 2017 within the black grouse survey area.
- Winter Transect Surveys involving walkover surveys to assess the use of the Site by passage and wintering birds, supplementing observations from the flight activity survey. Wintering bird walkover surveys of the core survey area were completed between October 2012 and March 2013.

22.16. Bird flight activity was systematically monitored from strategically located vantage points in 2012, 2013, 2017 and 2018 following the methods described in Band *et al.* (2007) and SNH (2005, revised 2014). The purpose of these surveys was to inform estimates of the frequency of flight activity, by certain 'target' species, at the estimated wind turbine height across the flight activity survey area. Target species were recorded in preference to secondary species if a target and secondary species were in the observer's view at the same time.

22.17. Watches from these vantage points were usually three hours long and were timed to ensure each vantage point had observations spread throughout daylight hours each month.

22.18. The height above ground level of target and secondary species flights was assessed by the observer to be within one of several bands so that an estimate could be made of flight activity within the zone where turbine blades would be operating. The height bands used in the flight activity surveys were <10 m, 10-30 m, 30-50 m, 50-100 m, 100-150 m and >150 m.

Species Records

22.19. The following brief summary focuses on records of target species. The desk studies identified that the study area provide potentially suitable habitat to support breeding peregrine and red kite although there was no current or recent historical evidence of breeding activity by these species within the proposed wind farm area. Breeding barn owl were known to be present in the general area.

Key Findings of the Baseline Surveys

22.20. In general, and in relation to target species, the findings of the baseline breeding and wintering bird surveys were consistent with the information collated during the desk studies.

Geese and Swans

22.21. The Site was rarely visited by significant numbers of wildfowl and patterns of flight activity showed no regular local or passage movements of geese or swans over the Site. The Site provides very limited suitable habitat for wintering / passage wildfowl.

22.22. South west Scotland is an important region for wintering geese and swans, including several internationally important sites including the Loch Ken and River Dee Marshes, Solway Estuary, Wigtown Bay, and the River Nith. However, all of these areas are more than 10 km from the Site and although there is the potential for geese and swans to occasionally fly over the Site, primarily during passage periods, the available evidence indicates that this type of movement is highly sporadic and typically at a height that is much greater than the wind turbines would be operating. More regular movements, and greater risk to local populations from

collision mortality, might be expected if the Development was located adjacent to, or in between important roosting and foraging areas, but this is not the case.

Raptors

22.23. Within the raptor survey area a peregrine breeding territory was recorded as occupied in 2013 and 2017. An occupied goshawk territory was recorded in 2017. Nest sites of each species were located less than 2 km and within the site respectively.

22.24. A traditional nest site used by peregrine was monitored in 2013 and 2017. In 2013 a pair was present but no breeding attempt was made. In 2017 the pair attempted to breed, however by 7 June the attempt had failed, probably at the egg stage. The reason for failure is unknown.

22.25. Evidence of a breeding attempt by goshawk was recorded within the site during 2017; the nest location was found and the breeding attempt was successful. At least one fledged juvenile was recorded in August 2017.

22.26. There was no evidence of breeding red kite in 2013 or 2017. However, red kite were observed periodically and to varying frequencies during the flight activity surveys (see Tables 3 and 4).

Black Grouse

22.27. There was no evidence of lekking black grouse within the site or survey area (i.e. within 1.5 km of the site boundary) in 2013 or 2017.

22.28. The only record of black grouse was of a single displaying male on 20 April 2017; at a distance greater than 1.5 km to the south-west of the site near Lochwhinnie Hill.

Waders

22.29. The survey area did not support any breeding waders species.

Barn Owl

22.30. No barn owl breeding sites were confirmed during the study period; however several old nest sites and recently used roost sites were located.

Other Species

22.31. The survey area supports a suite of breeding songbirds typically associated with commercial conifer plantation in south-west Scotland. The vast majority of the species recorded are relatively widespread and common (that is, their populations are not of conservation concern in Scotland).

Flight Activity Surveys

22.32. A summary of the observed flight activity by target species is provided in Tables 3 and 4. Tables 3 and 4 give a summary of the number of flight lines (and number of birds for flight lines representing more than one bird) recorded during 2012, 2013 and 2017 within the flight activity survey area. Tables 3 and 4 also provide a summary of the distribution of time recorded at the six flight height bands for each species[69].

22.33. Considering the length of the survey period and the survey effort as a whole, flight activity by target species was relatively infrequently recorded within the flight activity survey area, reflecting the generally poor habitat quality for most of the target species. The most frequently observed target species within the flight activity survey area was peregrine with 12 flights followed by goshawk (7) and red kite (5). By comparison the most frequently recorded species (including secondary species) during the flight activity surveys was common buzzard with a total of 282 flights observed.

[69] N.B. Data collection is on-going until end of March 2018 and full results will be presented within the EIA.

Table 1: Summary of survey effort during 2012-2013. Data are in hours (hrs)													
Survey Type	**Vantage Point**	**Oct-12**	**Nov-12**	**Dec-12**	**Jan-13**	**Feb-13**	**Mar-13**	**Apr-13**	**May-13**	**Jun-13**	**Jul-13**	**Aug-13**	**Grand Total**
Black grouse lek survey								4.0	4.0				8.0
Barn owl survey										0.5	2.25		2.75
Vantage Point Watches	VP1	9.0	6.0	6.0	6.0	6.5	4.5	7.5	8.0	8.0	8.0	5.5	75
	VP2	10.0	6.0	6.0	3.0	7.0	6.0	7.5	8.0	8.0	8.0	7.0	76.5
	Total	**19.0**	**12.0**	**12.0**	**9.0**	**13.5**	**10.5**	**15.0**	**16.0**	**16.0**	**16.0**	**12.5**	**151.5**
Moorland bird survey									1.0	0.5			1.5
Raptor survey							3.0	35.75	18.75	6.75	4.5		68.75
Winter transect survey		5.0	4.0	1.5	1.5	1.0	4.75						17.75

Table 2: Summary of survey effort during 2017. Data are in hours (hrs)											
Survey Type	**Vantage Point**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Grand Total**
Black grouse lek survey		4.25	3.75								8.0
Barn owl survey					3.95						3.95
Vantage Point Watches	VP1	8.33	8.0	8.0	6.0	6.0	4.5	7.5	5.5	4.0	57.83
	VP3	8.0	8.0	8.0	6.0	6.0	6.0	6.0	5.0	4.0	57.0
	Total	**16.33**	**16.0**	**16.0**	**12.0**	**12.0**	**10.5**	**13.5**	**10.5**	**8.0**	**114.83**
Raptor survey		16.08	15.0	10.0	8.0	3.5					52.58

Table 3: Flight activity, in seconds, observed within the flight activity survey area, 2012-2013											
Species	**Season**	**VP number**	**No of flights**	**No of birds**	**Total fly time (s)**	**<10m**	**10-30m**	**30-50m**	**50-100m**	**100-150m**	**>150m**
Peregrine	Apr-Aug	VP1	10	14	1061	59	108	286	295	313	
Pink-footed goose	Sep-Mar	VP2	1	120					*		

Table 4: Flight activity, in seconds, observed within the flight activity survey area, 2017											
Species	**Season**	**VP number**	**No of flights**	**No of birds**	**Total fly time (s)**	**<10m**	**10-30m**	**30-50m**	**50-100m**	**100-150m**	**>150m**
Goshawk	Apr-Aug	VP1	5	5	73		4	25	22	18	4
		VP3	2	2	49		17	32			
	Total		**7**	**7**	**122**		**21**	**57**	**22**	**18**	**4**
Greylag goose	Apr-Aug	VP1	2	4				*	*		
Red kite	Apr-Aug	VP3	2	2	238			16	146	54	22
	Sep-Mar	VP1	2	2	129		31	7	29	62	
		VP3	1	1	143				46	40	57
	Total		**5**	**5**	**510**		**31**	**23**	**221**	**156**	**79**
Peregrine	Apr-Aug	VP1	1	1	508				11	32	465
	Sep-Mar	VP3	1	1	66		16		50		
	Total		**2**	**2**	**574**		**16**		**61**	**32**	**465**

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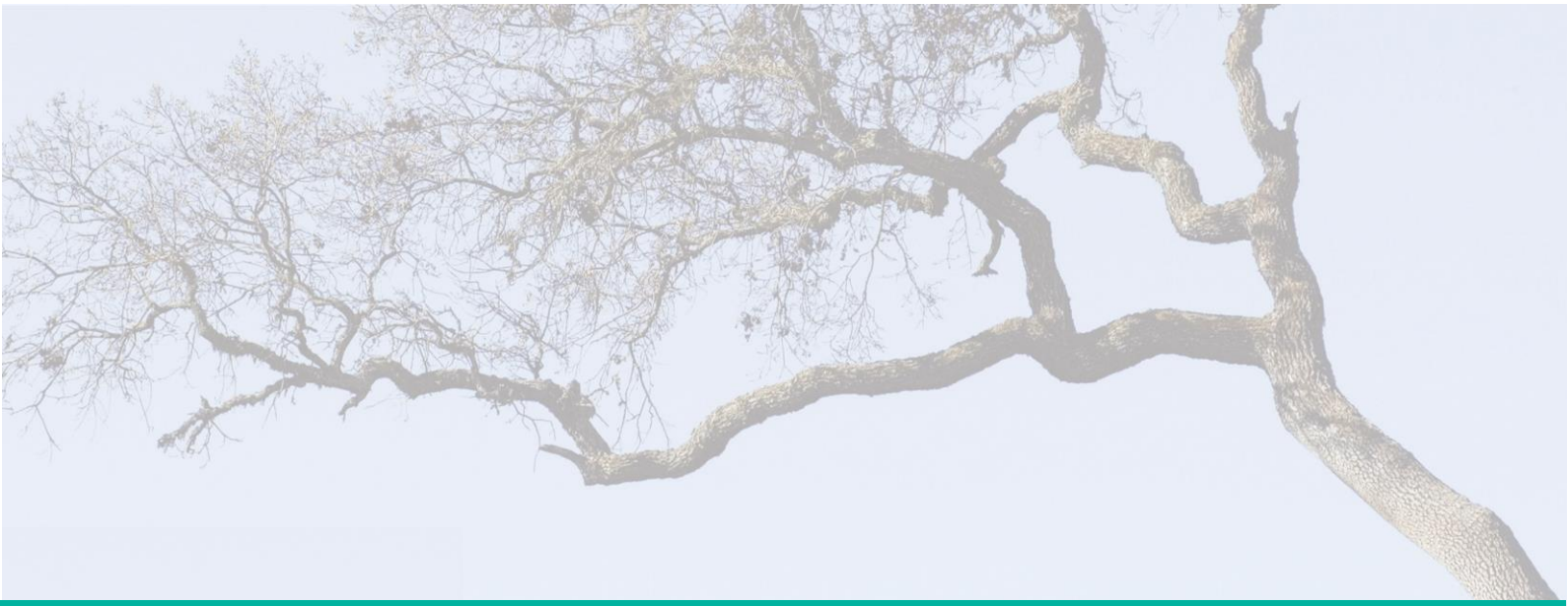

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